

**Zebra
AirWatch™ Connector**

User Guide



© 2013 ZIH Corp. The copyrights in this manual and the software and/or firmware in the print engine described therein are owned by ZIH Corp. and Zebra's licensors. Unauthorized reproduction of this manual or the software and/or firmware in the print engine may result in imprisonment of up to one year and fines of up to \$10,000 (17 U.S.C.506). Copyright violators may be subject to civil liability.

This product may contain ZPL[®], ZPL II[®], and Link-OS[™] programs; Element Energy Equalizer[®] Circuit; E³[®]; and Monotype Imaging fonts. Software © ZIH Corp. All rights reserved worldwide.

Link-OS[™] and all product names and numbers are trademarks, and Zebra, the Zebra logo, ZPL, ZPL II, Element Energy Equalizer Circuit, and E³ Circuit are registered trademarks of ZIH Corp. All rights reserved worldwide.

All other brand names, product names, or trademarks belong to their respective holders. For additional trademark information, please see "Trademarks" on the product CD.

Proprietary Statement This manual contains proprietary information of Zebra Technologies Corporation and its subsidiaries ("Zebra Technologies"). It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the express, written permission of Zebra Technologies.

Product Improvements Continuous improvement of products is a policy of Zebra Technologies. All specifications and designs are subject to change without notice.

Liability Disclaimer Zebra Technologies takes steps to ensure that its published Engineering specifications and manuals are correct; however, errors do occur. Zebra Technologies reserves the right to correct any such errors and disclaims liability resulting therefrom.

Limitation of Liability In no event shall Zebra Technologies or anyone else involved in the creation, production, or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, consequential damages including loss of business profits, business interruption, or loss of business information) arising out of the use of, the results of use of, or inability to use such product, even if Zebra Technologies has been advised of the possibility of such damages. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

rapidJson Library Copyright © 2011 Milo Yip

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

libCurl Library COPYRIGHT AND PERMISSION NOTICE Copyright © 1996 - 2012, Daniel Stenberg, <daniel@haxx.se>. All rights reserved. Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

Apache Tomcat Copyright © 1999-2013, The Apache Software Foundation

Sun, Sun Microsystems, Solaris, Java and JavaServer Pages are trademarks or registered trademarks of Oracle Corporation. UNIX is a registered trademark in the United States and other countries, exclusively licensed through 'The Open Group'. Microsoft, Windows, WindowsNT, and Win32 are registered trademarks of Microsoft Corporation. Linux is a registered trademark of Linus Torvalds. All other product names mentioned herein and throughout the entire web site are trademarks of their respective owners.

"Apache Tomcat" and "Tomcat" are trademarks of the Apache Software Foundation. Use of these trademarks is subject to the terms of section 6 of [Apache License, Version 2.0 \(current\)](#).



Notes • _____

Contents

About This Document	7
Who Should Use This Document	8
How This Document Is Organized	8
Document Conventions	9
Introduction	11
Overview	12
What the AirWatch Connector Does	12
Supported Printers	12
Supported Operating Systems	12
Installation	13
Installing in a Windows Operating System	14
Installation Steps	15
Configuring Printers with WebLink	37
Configuring Weblink	38
Using AirWatch Connector	43
Printer Discovery	44
Organizing Printers	45
Profiles	49
Updating Printer Firmware and Files	52
Checking Printer Status	55

- Troubleshooting 57**
 - Troubleshooting 58
 - SSL/TLS Certificate Errors 60
 - Other Typical Errors 62
 - Troubleshooting 63
 - HTTP Messages 64

- WebLink Set/Get/Do Commands 65**
 - Introduction to SGD Commands 66
 - weblink.enable 67
 - weblink.ip.conn[1|2].authentication.add 68
 - weblink.ip.conn[1|2].authentication.entries 70
 - weblink.ip.conn[1|2].authentication.remove 71
 - weblink.ip.conn[1|2].enable 72
 - weblink.ip.conn[1|2].location 73
 - weblink.ip.conn[1|2].maximum_simultaneous_connections 74
 - weblink.ip.conn[1|2].proxy 75
 - weblink.ip.conn[1|2].retry_interval 77
 - weblink.ip.conn[1|2].test.location 78
 - weblink.ip.conn[1|2].test.retry_interval 80
 - weblink.ip.conn[1|2].test.test_on 81
 - weblink.logging.clear 83
 - weblink.logging.entries 84
 - weblink.logging.max_entries 85
 - weblink.printer_reset_required 87
 - weblink.restore_defaults 88

About This Document

This section provides you with contact information, document structure and organization, and additional reference documents.

Contents

Who Should Use This Document	8
How This Document Is Organized	8
Document Conventions	9

Who Should Use This Document

This User Guide is intended for use by any person who needs to install, perform routine maintenance, upgrade, or troubleshoot problems with the Zebra AirWatch Connector software.

How This Document Is Organized

The User Guide is set up as follows:

Section	Description
<i>Introduction</i>	This section provides general information about the Zebra AirWatch Connector.
<i>Installation</i>	This section outlines the system requirements for installation and provides specific details for the installation of Zebra AirWatch Connector.
<i>Configuring Printers with WebLink</i>	This section describes basic, network, and firewall configurations for printers connected to Zebra AirWatch Connector.
<i>Using AirWatch Connector</i>	This section provides specific information about organizing and managing printers via Zebra AirWatch Connector.
<i>Troubleshooting</i>	This section provides troubleshooting information about the Zebra AirWatch Connector.
<i>WebLink Set/Get/Do Commands</i>	This section describes the Set/Get/Do commands, parameters, and values that are available with Zebra AirWatch Connector.

Document Conventions

The following conventions are used throughout this document to convey certain information.

Alternate Color (online only) Cross-references contain hot links to other sections in this guide. If you are viewing this guide online in .pdf format, you can click the cross-reference ([blue text](#)) to jump directly to its location.

Command Line Examples Command line examples appear in Courier New font. For example, type `ZTools` to get to the Post-Install scripts in the `bin` directory.

Files and Directories File names and directories appear in Courier New font. For example, the `Zebra<version number>.tar` file and the `/root` directory.

Icons Used



Important • Advises you of information that is essential to complete a task.



Note • Indicates neutral or positive information that emphasizes or supplements important points of the main text.



Example • Provides an example, often a scenario, to better clarify a section of text.



Notes • _____

Introduction

This section provides general information about the Zebra AirWatch Connector.

Contents

Overview	12
What the AirWatch Connector Does	12
Supported Printers	12
Supported Operating Systems	12

Overview

The Zebra AirWatch Connector partners with the AirWatch server to manage your Zebra Link-OS™ printers.

Zebra AirWatch Connector will:

- Monitor printers and report issues to the AirWatch system
- Monitor printer alerts
- Enable administrators to send files and operating system updates to the printer via the AirWatch server console

What the AirWatch Connector Does

Zebra AirWatch Connector sends alerts to AirWatch, watches printers coming online, monitors the status of the printers, and sends files and settings to the printers.

Supported Printers

- QLn320™ Ethernet and Wi-Fi
- QLn220™ Ethernet and Wi-Fi
- QLn420™ Ethernet and Wi-Fi
- iMZ320™ Wi-Fi
- iMZ220™ Wi-Fi
- ZT200™ Series Ethernet and Wi-Fi
- ZD500R™ Ethernet and Wi-Fi

Supported Operating Systems

The Zebra AirWatch Connector supports the 32-bit or 64-bit versions of the following:

- Windows® Server 2008
- Windows Server 2008 R2 (also known as Windows 7 Server)

Installation

This section outlines the system requirements for installation and provides specific details for the installation of Zebra AirWatch Connector.

Contents

Installing in a Windows Operating System	14
Minimum System Requirements	14
Installation Steps	15
Step 1: Install an AirWatch Server	15
Step 2: Install Software	15
Step 3: Set Up Zebra AirWatch Connector	26
Step 4: Create a Certificate	29
Step 5: Set Up Printers	32
Step 6: Test a Printer	33

Installing in a Windows Operating System

Minimum System Requirements

The Zebra AirWatch Connector supports the 32-bit or 64-bit versions of the following:

- Windows Server 2008
- Windows Server 2008 R2 (also known as Windows 7 Server)



Note • This system should be installed on a “clean” Windows Server. A clean system is one that does not already include Apache Tomcat[™] or any other server software installation.

Tomcat will be installed as part of this installation procedure and must be the only Tomcat version resident on this system. Multiple versions of Tomcat will encounter conflicts.

Installation Steps

Step 1: Install an AirWatch Server

1. Contact AirWatch.
 - a. Contact AirWatch Customer Support to obtain an AirWatch version 6.3 or later installation.
 - b. Obtain the AirWatch Endpoint URL from your AirWatch support representative.



Note • The URL you will be searching for usually starts with the deviceservices server. Ask for the Zebra printer management URL.

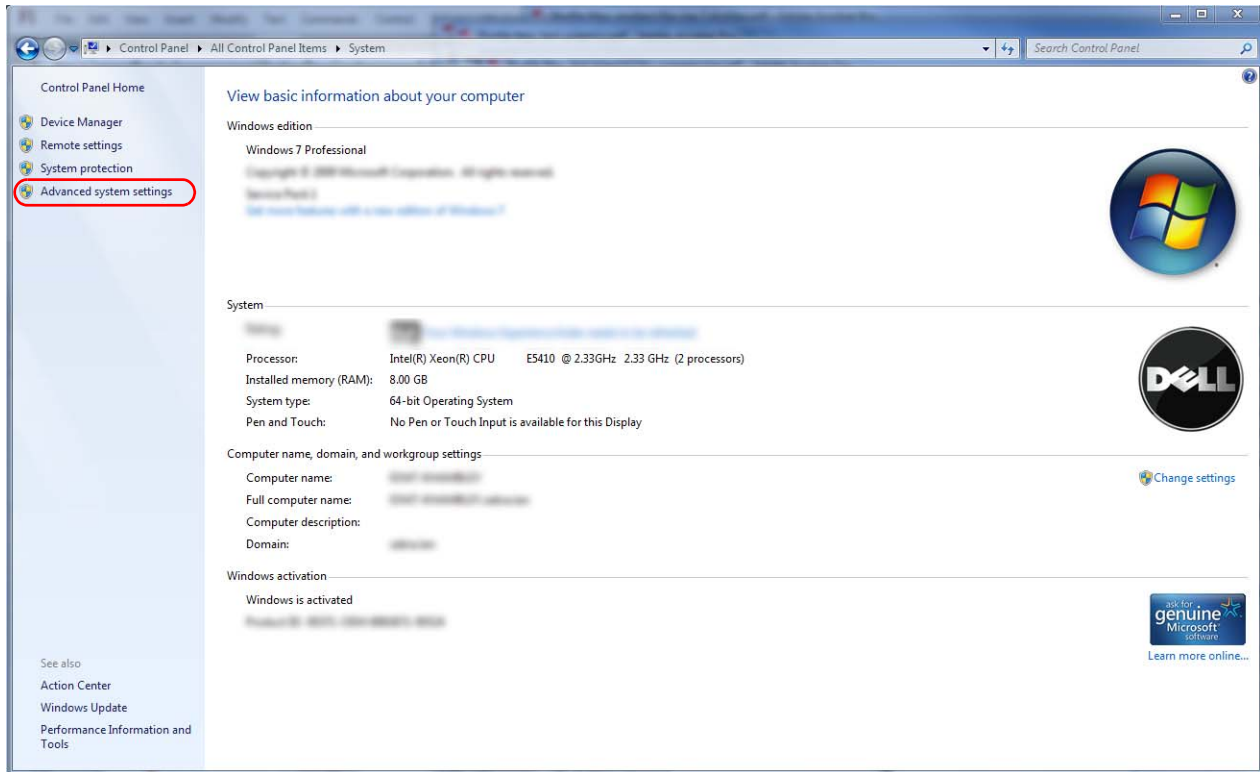
Example • <https://airwatchportals.com/deviceservices/peripheralservice/v1/register>

Step 2: Install Software

1. Install Zebra AirWatch Connector software.
 - a. Open a web browser.
 - b. Download and install Java Runtime version 7 or greater:
<http://www.java.com/en/download/index.jsp>
 - c. Download and install the Java Cryptography Extension:
<http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html>
 - d. Download and install the latest version of Open SSL:
<http://slproweb.com/products/Win32OpenSSL.html>

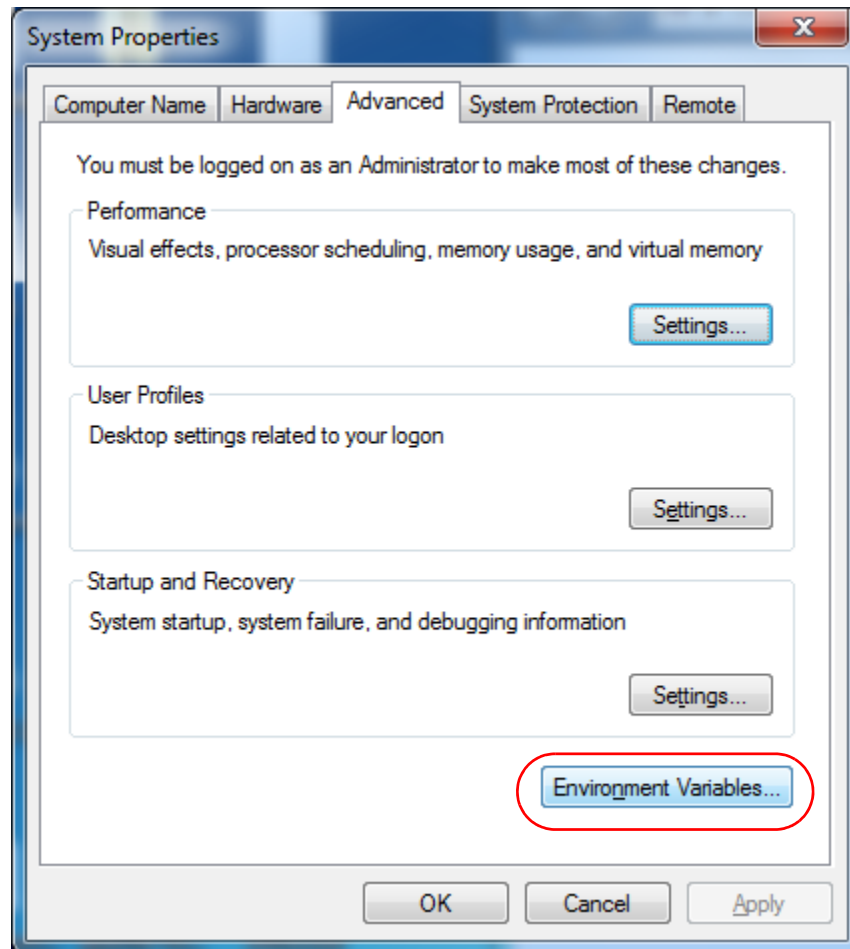
2. Once Java is installed, the JAVA_HOME environment variable needs to be set.
 - a. Open the Control Panel.
 - b. Select System.
 - c. See [Figure 1](#). Click on Advanced system settings.

Figure 1 • Control Panel > System



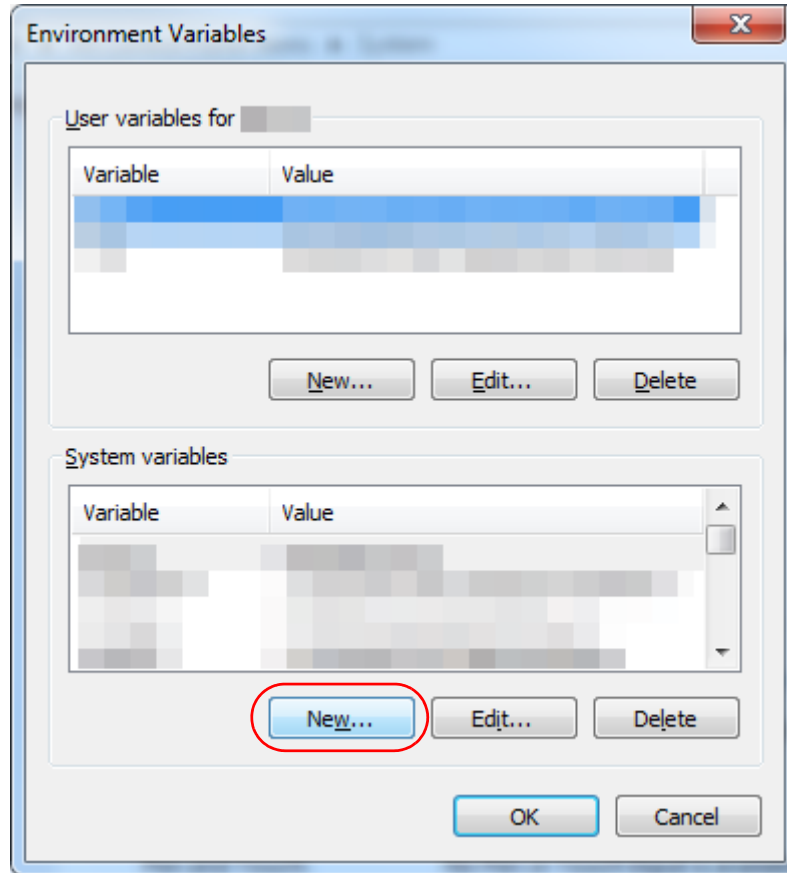
- d. See [Figure 2](#). Click on the Advanced tab.
- e. Click on Environment Variables.

Figure 2 • Advanced Tab



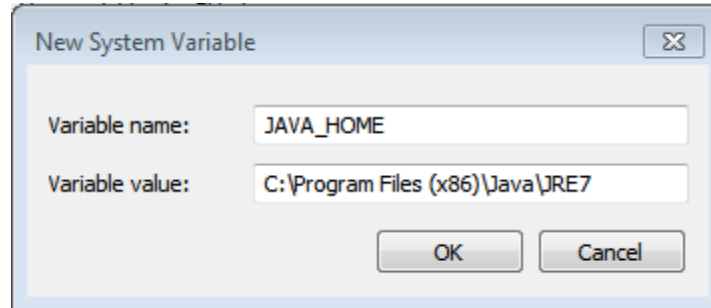
- f. See Figure 3. To create a new environment variable under System variables, click on New....

Figure 3 • Environment Variables Dialog



- g. See [Figure 4](#). Enter the Variable name and Variable value shown below in the appropriate boxes.

Figure 4 • New System Variable

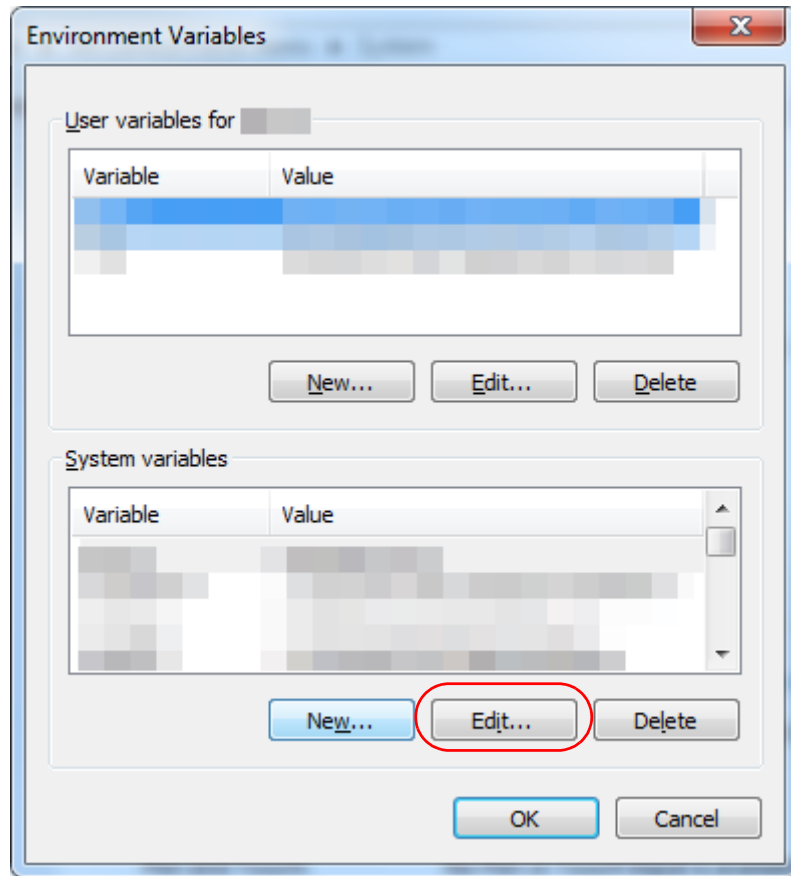


The image shows a Windows dialog box titled "New System Variable". It has a close button (X) in the top right corner. The dialog contains two text input fields. The first field is labeled "Variable name:" and contains the text "JAVA_HOME". The second field is labeled "Variable value:" and contains the text "C:\Program Files (x86)\Java\JRE7". At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

- h. Click OK to save the new system variable and value.

- i. See Figure 5. To edit the path variable under System variables, click on Edit...

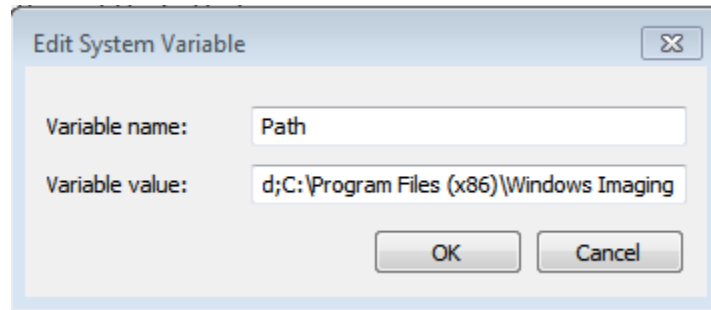
Figure 5 • Environment Variables Dialog



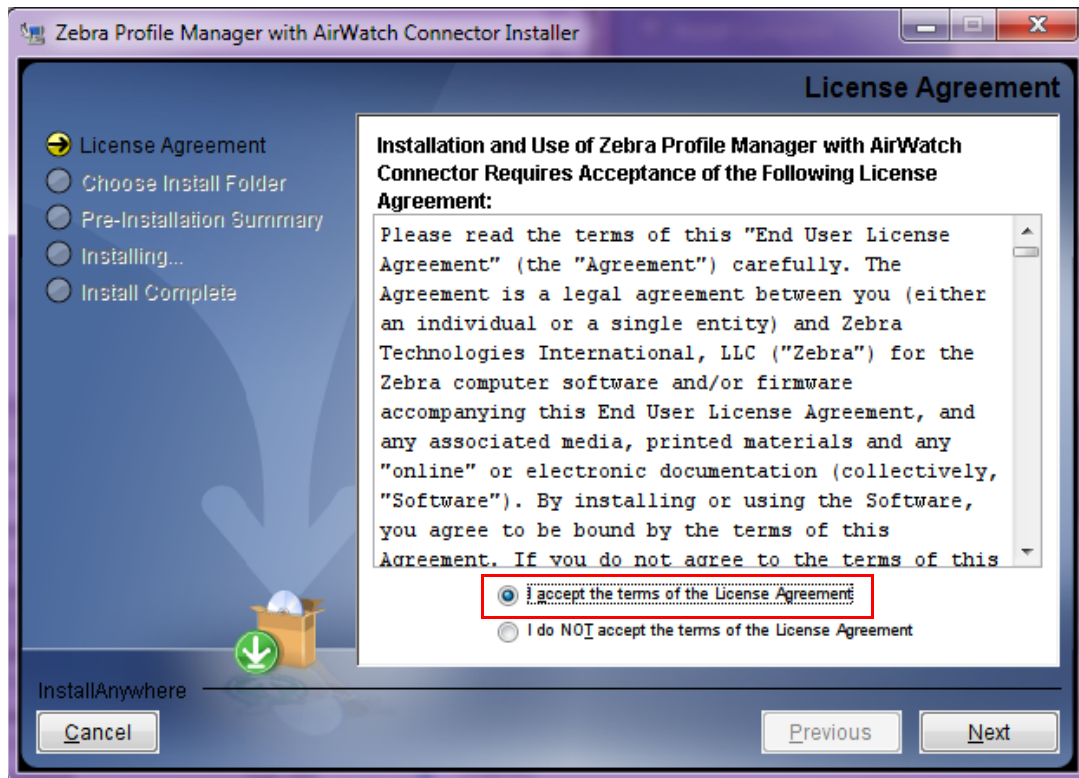
- j. See Figure 6. Add the following lines to the end of the Variable value:

C:\Program Files (x86)\Java\jre7\bin; C:\openssl\bin;

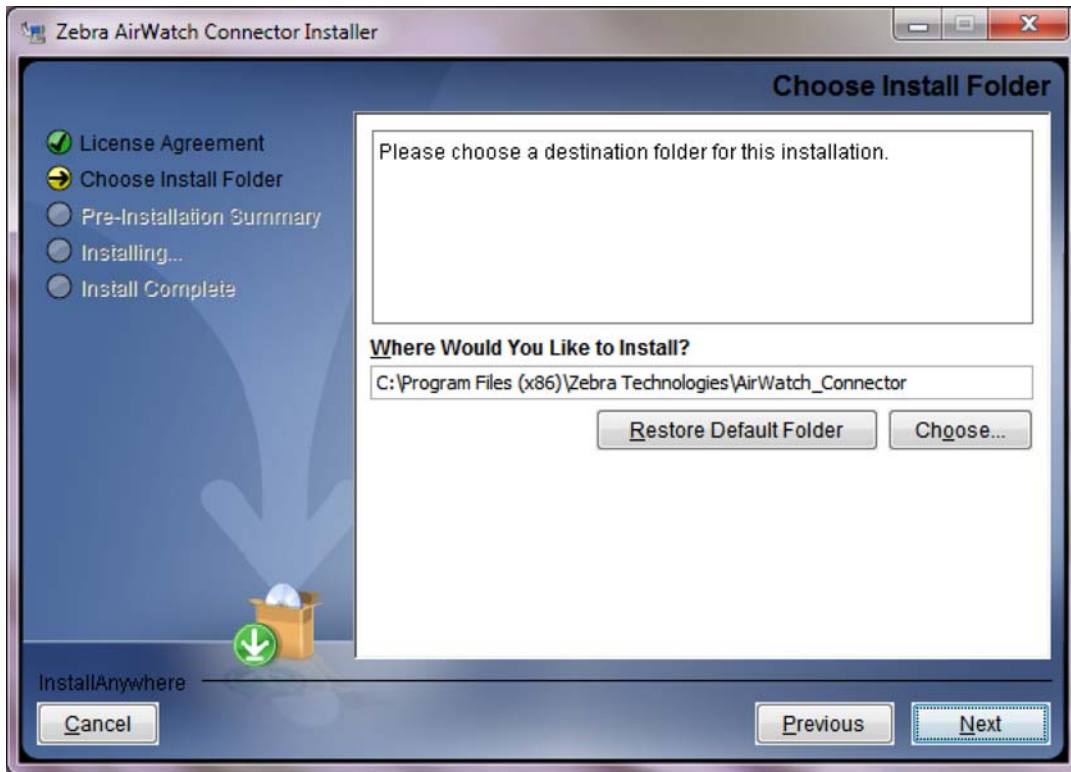
Figure 6 • New System Variable



- k. Click OK to save the system variable and value.
 - l. Navigate to www.zebra.com/linkos and download the Zebra AirWatch Connector.
3. Run `install.exe`.
- a. You must accept the terms of the License Agreement to continue.
 - b. Click Next.



4. Determine the location to install the Zebra AirWatch Connector.



5. Click Next.

6. The installer will fill in the Zebra Endpoint URL.



Note • If the URL does not match your DNS server name, change the DNS name to your server name.

Example • http://zserver.abccompanyinc.com/zebra_airwatch_connector/zebra/wakeup

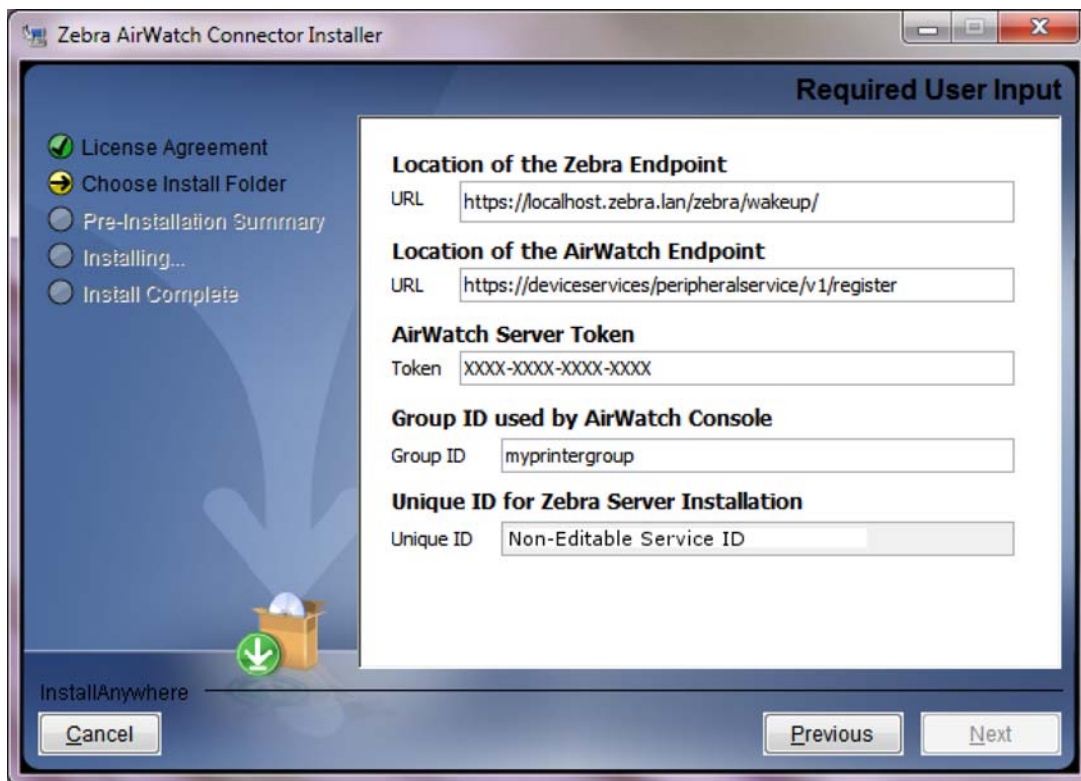
7. Enter the AirWatch Endpoint URL (obtained during the AirWatch server installation).



Note • The URL starts with the deviceservices server. Ask for the Zebra printer management URL.

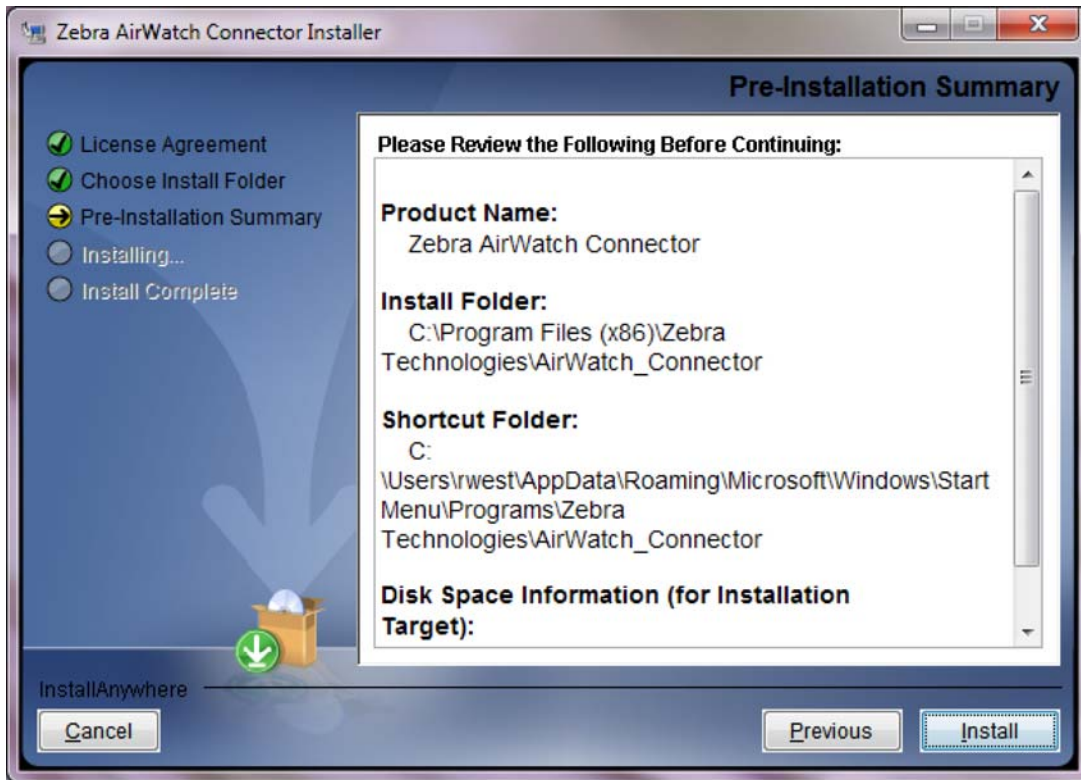
Example • <https://airwatchportals.com/deviceservices/peripheralservice/v1/register>

8. Enter the string XXXX-XXXX-XXXX-XXXX for the AirWatch Server token.
9. Enter the base Group ID for your company from your AirWatch installation.

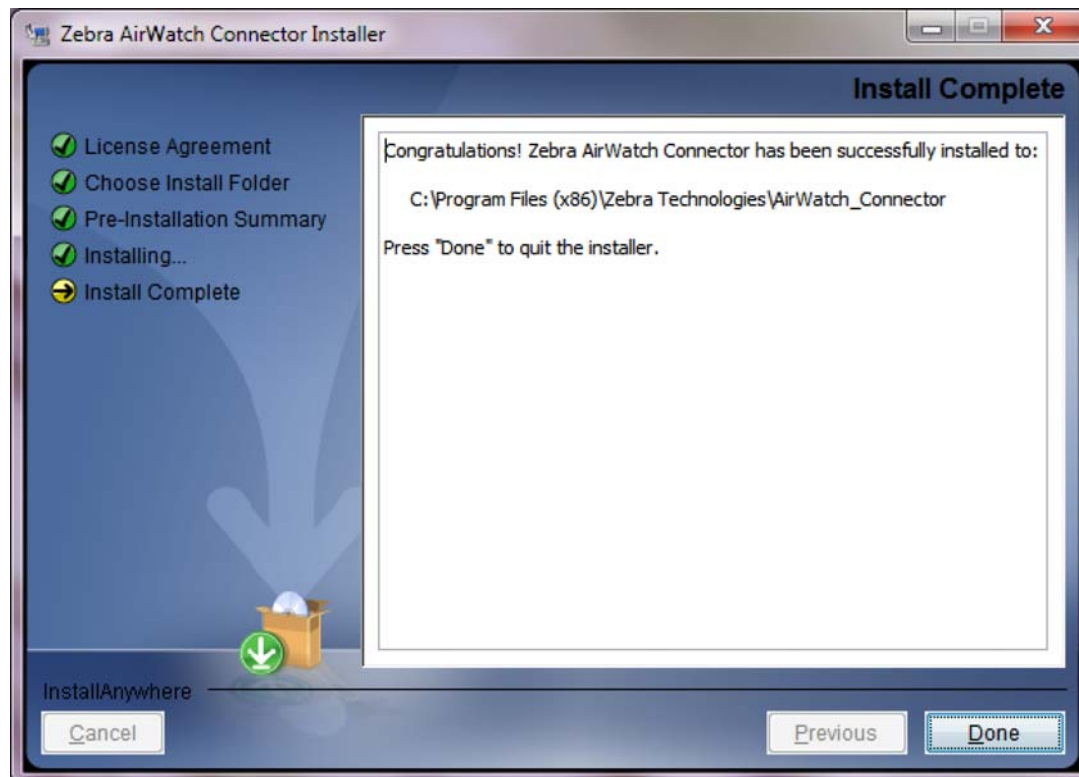
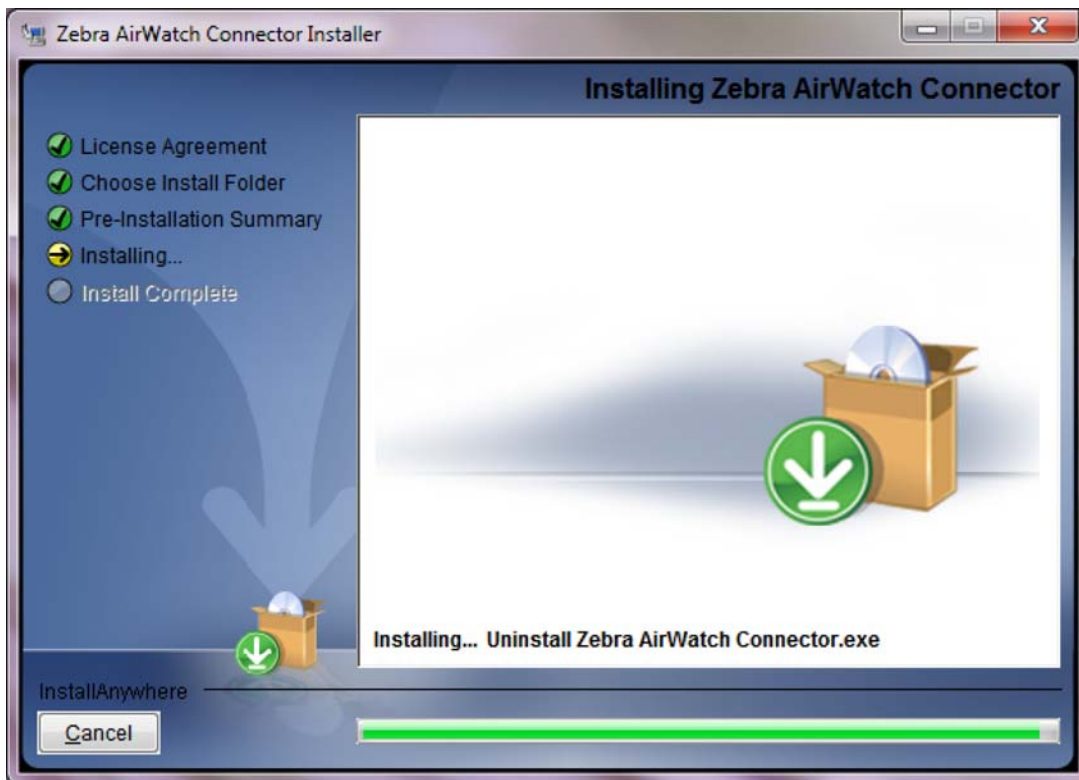


10. Click Next.

11. Verify that the wizard summary file locations are correct as shown.



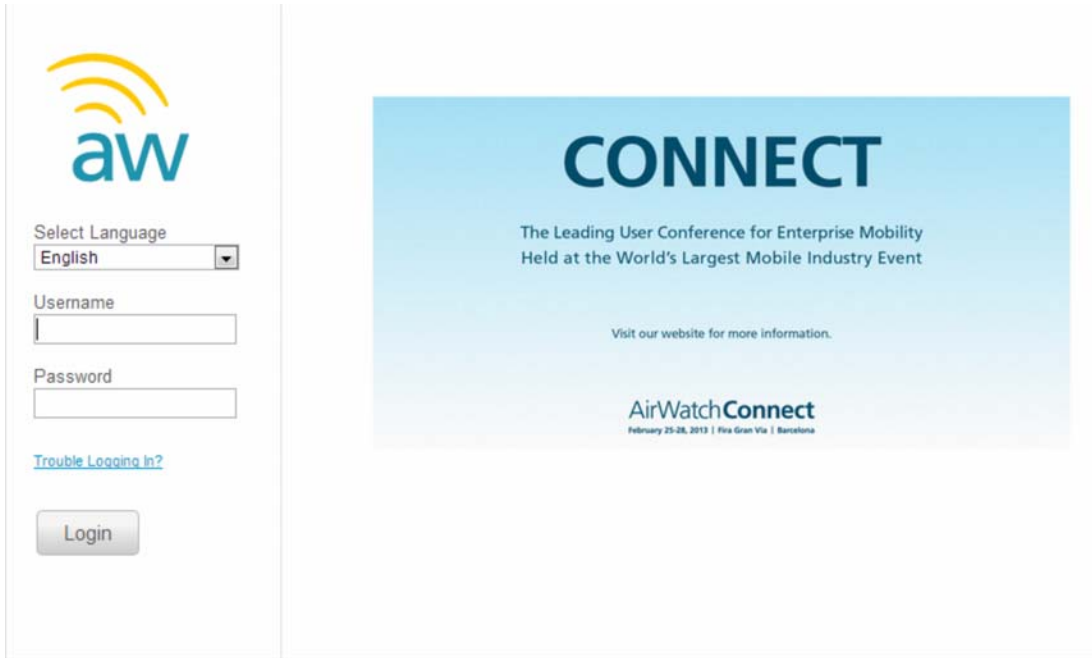
12. Click Install.



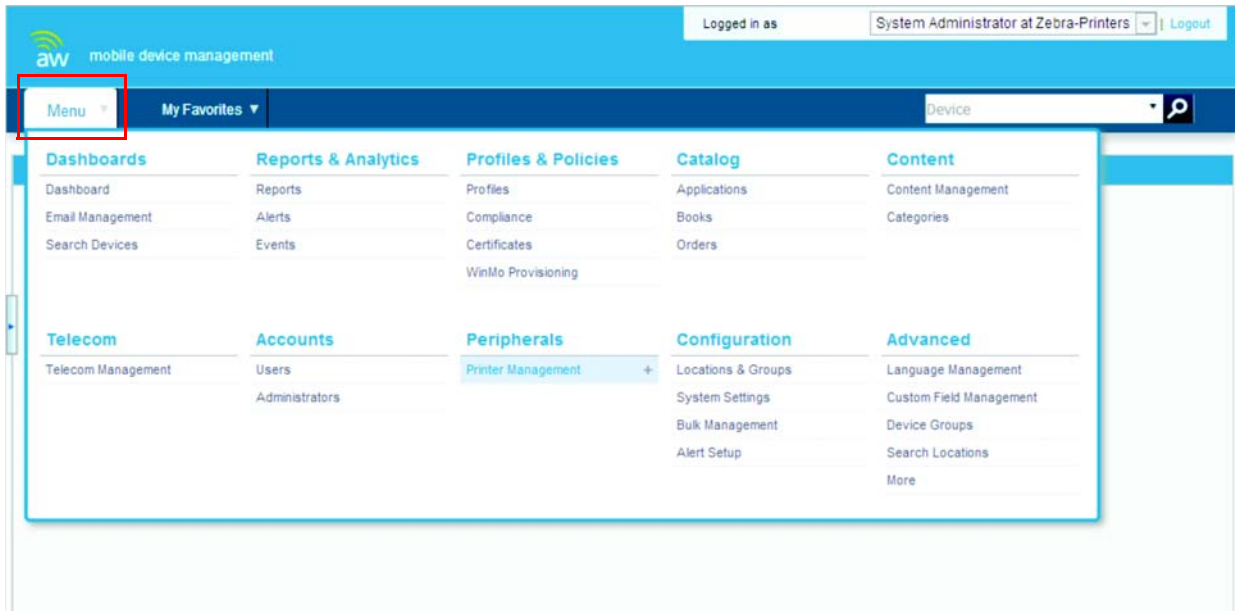
13. Click Done.

Step 3: Set Up Zebra AirWatch Connector

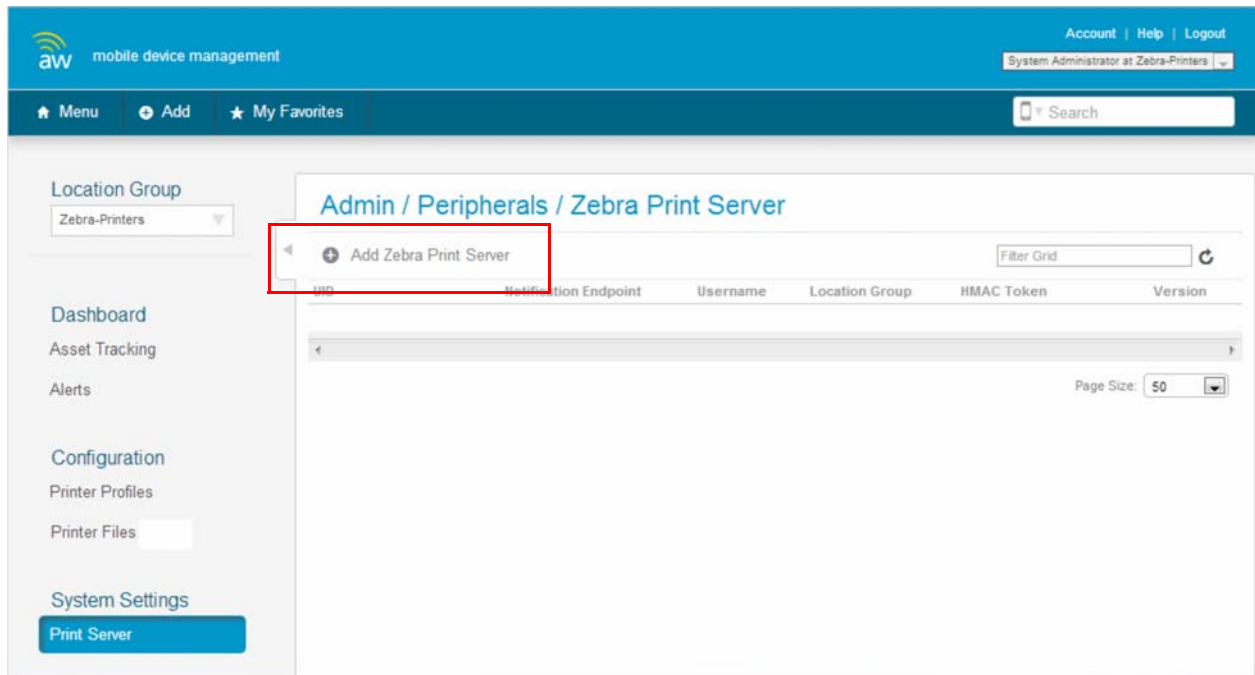
1. Set up the Zebra AirWatch Connector within the AirWatch console.
 - a. Open a web browser.
 - b. Log into the AirWatch console.



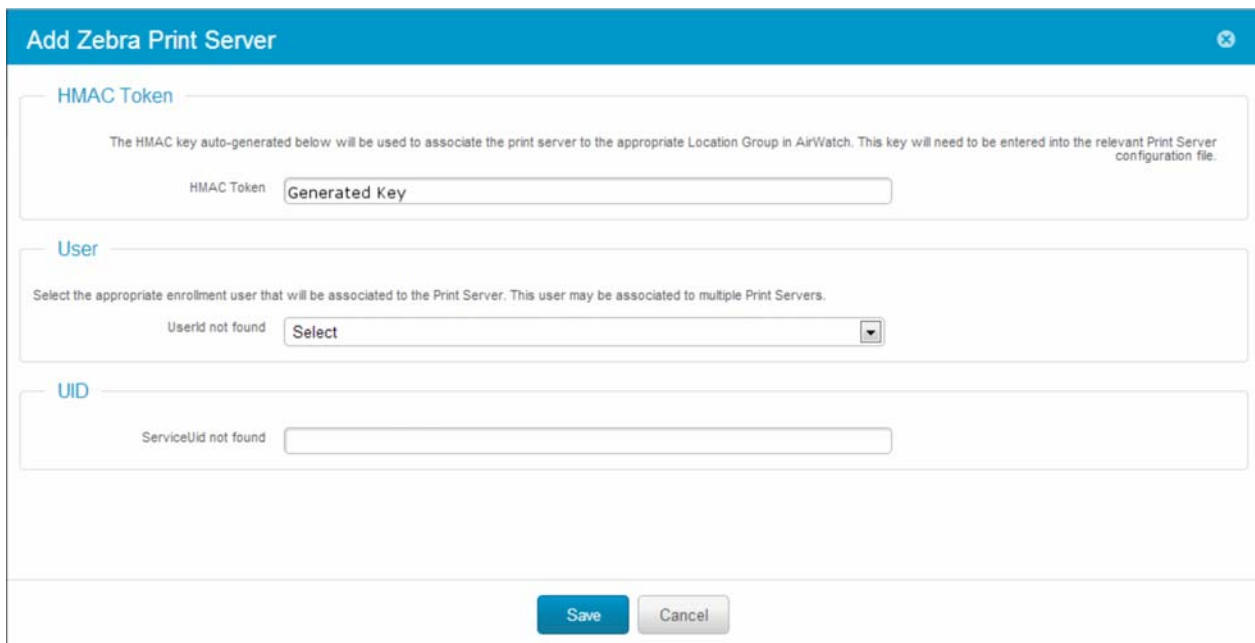
2. Under Menu, select Peripherals > Printer Management (shown in red).



3. Under System Settings, select Print Server.



4. Select Add Zebra Print Server (see the preceding graphic and area in red).
 Note the HMAC token. (You will need the token later in this procedure.)

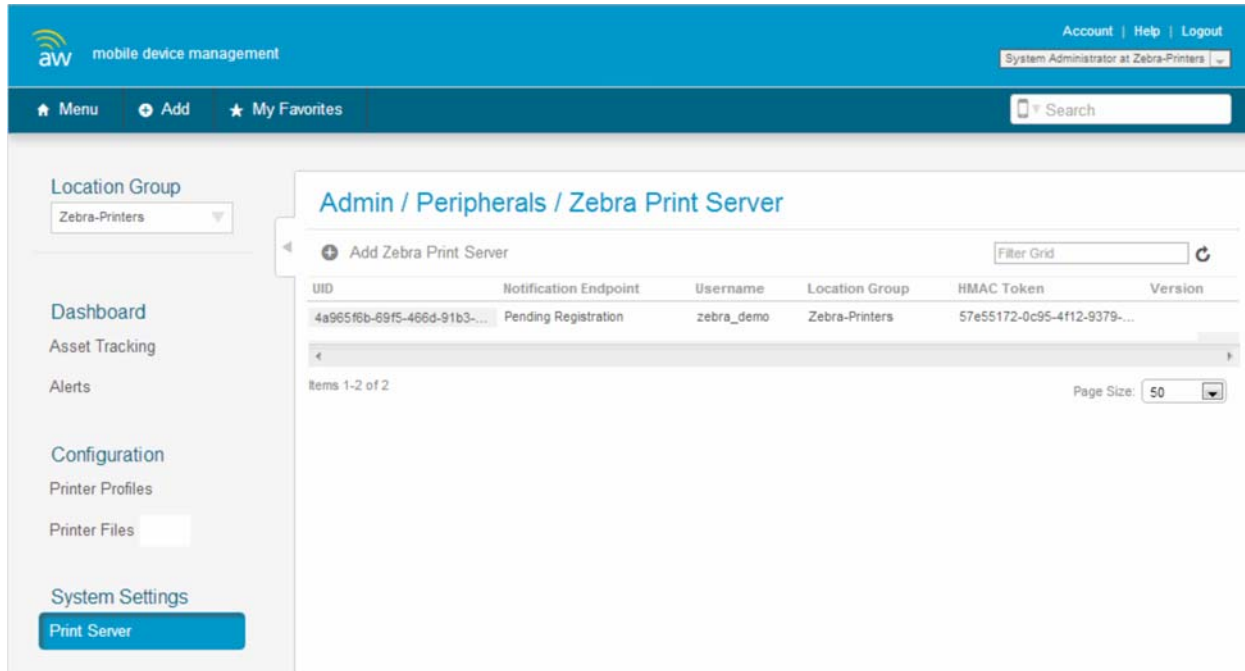


5. Enter your user information.

6. Enter the Zebra ServiceUID in the UID section.

7. Click Save.

The Zebra server will be shown as Pending Registration.



8. On your server, navigate to the install location for Zebra AirWatch Connector (default is `C:\Program Files\Zebra Technologies\AirWatch_Connector`).
9. Go to the resources folder:
`.\apache-tomcat-7.0.33\webapps\zebra_airwatch_connector\Resources`
10. Open the `zebraAirwatch.options` file with any text editor.
11. Change the `XXXX-XXXX-XXXX-XXXX` string (key value is "AirWatchToken") to the AirWatch HMAC token you just got from the Add Zebra Print Server dialog box (in [step 4](#) on [page 27](#)).
12. Save the file.

Step 4: Create a Certificate

1. Create a directory named `zebra_certs`.
This directory may reside anywhere you choose (desktop, etc.).
2. From the Start menu, run `cmd.exe` as the administrator.
Opens a DOS prompt.
3. Navigate to your `zebra_certs` directory.
Run the following commands from this directory:
 - a. Type: `set RANDFILE=.rnd`
 - b. On the command line, type `openssl`, and then press Enter.
4. Enter the following command and fill in the fields based on the information provided below:
 - a. Type: `genrsa -out zserver.abccompanyinc.com.key 2048`, and then press Enter.
where `zserver.abccompanyinc.com` = full DNS name of the server



Note • This command generates the key and is part of the security for the server communications. DO NOT give this information out to anyone.

- b. Enter the following command and fill in the fields based on the information provided below:

```
req -new -subj
"/C=xx/ST=yyyyy/L=aaaaa/O=jjjjj/OU=rrrrrrr/emailAddress=sss/CN=uuuuu" -key uuuuu.key -out uuuuu.csr
```

- where `xx`: two digit Country Code
- where `yyyyy`: State name where the server (or company) resides
- where `aaaaa`: City or town name
- where `jjjjj`: Organization or company name
- where `rrrrrrr`: Organizational unit name
- where `sssss`: the contact email address for the certificate creator
- where `uuuuu`: full DNS name of the server



Note • The DNS name must match the DNS name supplied to the printer as the location URL as the Zebra AirWatch Connector.



Example • Listed below is an example of a complete certificate creation request.

```
req -new -subj "/C=US/ST=Illinois/L=Anytown/O=ABC
Company Inc/OU=IT
Team/emailAddress=John@abccompanyinc.com/CN=zserver.abcc
ompanyinc.com" -key zserver.abccompanyinc.com.key -out
zserver.abccompanyinc.com.csr
```

5. Email the certificate file (.csr file) to softpm@zebra.com.
This certificate will be signed and sent back to you. Once you receive a signed copy, proceed to the next step.
6. Copy the zip file containing the signed certificate files to the `zebra_certs` directory.
7. Extract the signed certificate files into the same directory.



Note • You should receive four certificate files: one that matches the one you sent and three with the names `ZebraCACChain`.

8. This step will convert the certificate and ask you to set a passkey. Enter the following command and fill in the fields based on the information provided below:

```
pkcs12 -export -in zserver.abccompanyinc.com.cer -inkey  
zserver.abccompanyinc.com.key -out  
zserver.abccompanyinc.com.p12 -name tomcat -CAfile  
ZebraCACChain.cer -caname root -chain
```

 - where `zserver.abccompanyinc.com`: full DNS name of the server
 - This command will ask you to set a passkey.
9. Enter a standard alphanumeric passkey, but do not include any special characters (for example, do not use characters such as \$, %, &, or @). The passkey should be something easy to remember, but should not be distributed to anyone.
10. Copy this file `zserver.abccompanyinc.com.p12` to:
`%TOMCAT_INSTALL_LOCATION%\tomcat7.0.33\conf` directory

11. Configure the Tomcat server to use the passkey (created in [step 8](#)) and the certificate file.
 - a. From the `%TOMCAT_INSTALL_LOCATION%\tomcat7.0.33\conf` directory, edit the `Tomcat server.xml` file as follows:
 - where `%TOMCAT_INSTALL_LOCATION%`: your installation directory location
 - b. Include the following text within the `<Service>` XML block:

```
<Service name="Catalina">
...
<Connector SSLEnabled="true" acceptorThreadCount="5"
clientAuth="want" keyAlias="tomcat"
keystoreFile="conf/zserver.abccompanyinc.com.p12"
keystorePass="YourPasskey" keystoreType="pkcs12"
maxConnections="-1" maxThreads="2500" port="443"
protocol="org.apache.coyote.http11.Http11NioProtocol"
scheme="https" secure="true" sessionTimeout="0"
socket.soKeepAlive="true" sslProtocol="TLS"/>
...
</Service>
```

- where `zserver.abccompanyinc.com`: full DNS name of the server
 - where `YourPasskey` = passkey from [step 8](#).
12. Run the following command from the `zebra_certs` directory:
 - a. `%> keytool -importcert -file ZebraCACChain.cer -keystore "%JRE_HOME%\lib\security\cacerts" -alias "ZebraCACChain"`
 - where `%JRE_HOME%`: local installation of the Java Runtime Environment (JRE)
 - JRE default locations: `C:\Program Files\Java\jre7` or
for a 32-bit version: `C:\Program Files (x86)\Java\jre7`



Note • The default password for the Java cacert keystore is *changeit*.

13. Verify the certificates were correctly installed by entering the following command:


```
keytool -keystore "%JRE_HOME%\lib\security\cacerts" ^
-alias "ZebraCACChain" -list
```

 - a. Enter keystore password (default password is *changeit*).
The console will show the following:
`ZebraCACChain, Feb 18, 2013, trustedCertEntry,`
`Certificate fingerprint (MD5):`
`ED:D2:75:F3:84:5E:32:E7:82:5A:3C:4D:1A:B4:73:2C`
14. From the Zebra Technologies AirWatch Connector directory, navigate to the `tomcat/bin` directory.

15. Open catalina.bat in a text editor.
 - a. Find the line that sets the JAVA_OPTS:
`set JAVA_OPTS=%JAVA_OPTS% %LOGGING_MANAGER%`
 - b. Edit the JAVA_OPTS line (above) to read as shown below:
`set JAVA_OPTS=%JAVA_OPTS% %LOGGING_MANAGER% -
Djava.rmi.server.useCodebaseOnly=false`
 - c. Find the next line that sets the JAVA_OPTS:
`set JAVA_OPTS=%JAVA_OPTS% %LOGGING_CONFIG% -`
 - d. Edit the JAVA_OPTS line (above) to read as shown below:
`set JAVA_OPTS=%JAVA_OPTS% %LOGGING_CONFIG% -
Djava.rmi.server.useCodebaseOnly=false`
 - e. Save this file.

16. Restart the Tomcat server by navigating to the Tomcat install directory and running the bin/startup.bat file.

Step 5: Set Up Printers

1. Set up your printers to communicate with AirWatch:
 - a. Download the latest operating system for your printers from <http://www.zebra.com>
 - b. Using the ZDownloader Utility, install the firmware on your Zebra printers.
(To obtain a copy of the ZDownloader Utility, go to www.zebra.com/utilities.)
 - c. Using the [Zebra Setup Utilities](#), configure your printer on your network.
 - d. Set up the printers based on the [Configuring Printers with WebLink on page 37](#).

Step 6: Test a Printer

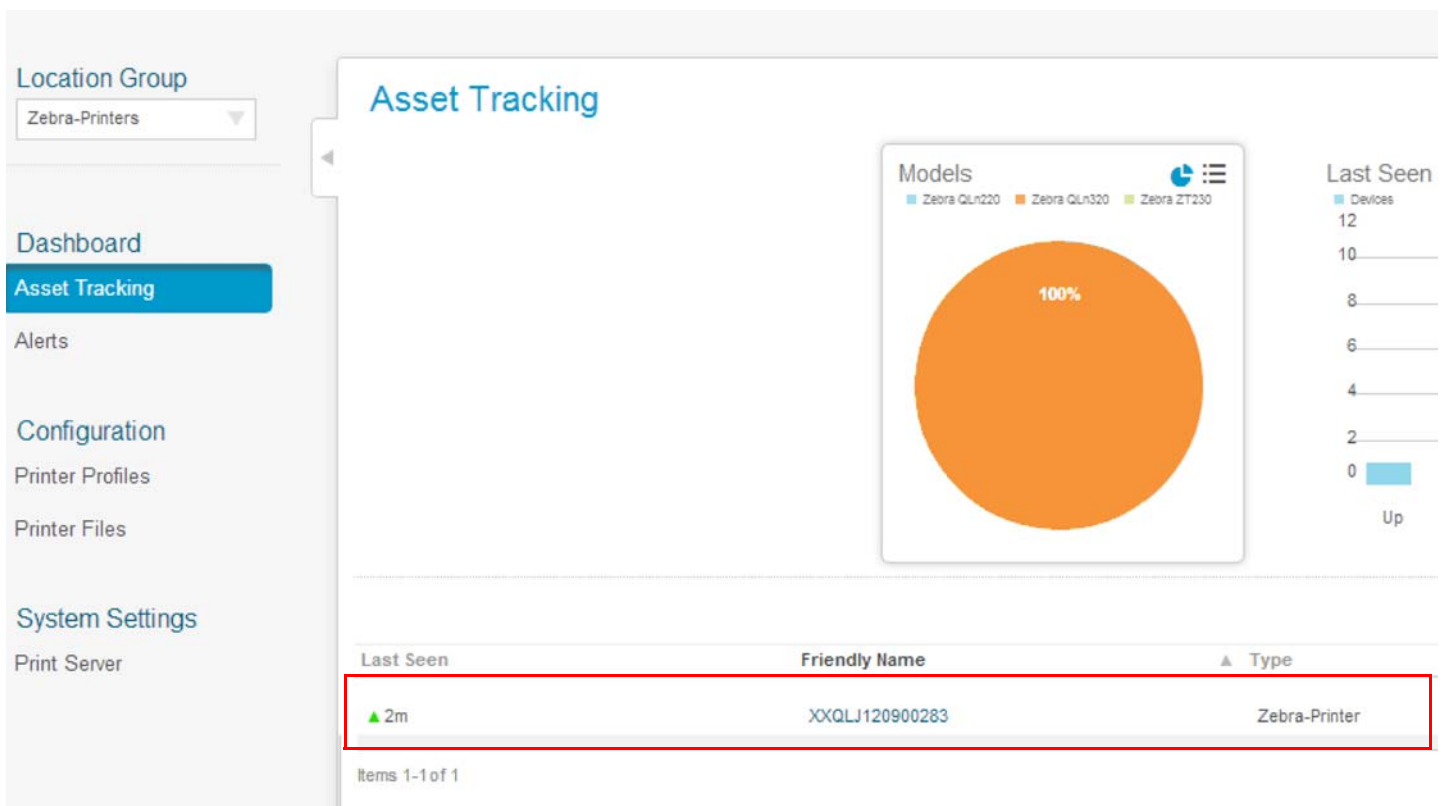
Request Settings from a Printer

In this section, you will test a printer to verify that the AirWatch console is able to request the current settings from the printer.

1. Turn on the printer.
2. Log into the AirWatch console, if necessary.



Note • Once you are logged in, the printer appears on your console after approximately 60 seconds. (See figure below.)




3. To see specific details about this printer, click on the Friendly Name of the printer.
The printer summary appears. If the printer settings appear on the screen, AirWatch is receiving settings from the printer.

XXQLJ120900283

Device Query Soft Reset Factory Reset

Summary Alerts Profiles Files Event Log



Status
✔ Enrolled

Last Seen
▼ 1/3/2013 11:53:54 AM

Enrollment Date
1/3/2013 3:27:39 PM

UDID
XXQLJ120900283


Type	Printer-Zebra
Model	Zebra QLn320
Printer Name	XXQLJ120900283
Firmware Version	V68.19.0Z
IP Address	10.3.1.98
Gateway IP Address	10.3.4.1
Battery Percentage	100
Power Health	good
Print Mode	3
Print Method	2
Label Length	406
Print Width	406
Printer Darkness	

Receiving Alerts from a Printer

In this section, you will test that the AirWatch console receives alerts from the printer.


1. Click the Alerts tab.
2. Open the media door on the printer.
3. Wait 10 seconds, and then refresh the AirWatch console display.

You should see the Head Open alert with the orange exclamation mark in the Status column.

Status	Sample Time	Alert Type	Severity
	1/10/2013 3:10:00 PM	Head Open	1

4. Close the media door on the printer.
5. Wait 10 seconds, and then refresh the AirWatch console display.

You should see the Head Open alert with the blue check mark in the Status column. If the alerts appear on the screen, you have verified that the printer is able to send alerts to the AirWatch console.

Status	Sample Time	Alert Type	Severity
	1/10/2013 3:14:14 PM	Head Open	1



Note • Both the Status icon and the Sample Time change on the Alerts screen.



Notes • _____

Configuring Printers with WebLink

This section describes basic, network, and firewall configurations for printers connected to Zebra AirWatch Connector.

Contents

Configuring Weblink	38
Basic Configuration	38
When a Proxy Server is Part of the Network Configuration	38
When HTTP Authentication is Necessary	39
Additional Firewall Configuration	40
Difference Between Conn1 and Conn2	40
Enable Logging	40
Navigating the Log Output	41

Configuring Weblink

When any WebLink setting (with the exception of the logging settings) is adjusted either via SNMP, SGD, or JSON it is required that the printer be reset before the new value takes effect. The `weblink.printer_reset_required` setting will be set to "yes" if there are any settings that have been modified that require a printer reset.

Basic Configuration

To determine how much configuration is necessary, consider the following questions:

- Is the remote server that the printer is attempting to connect to outside of the corporate firewall?
- Does the firewall require a username and password to access the remote server?
- Does the printer require a proxy server to access the remote server?
- Does the firewall permit HTTPS connections initially, or does the printer need to connect via HTTP first?

If the answer to any of these questions is 'yes', then more than the basic configuration may be necessary. Depending upon the network environment that the printer is in, accessing the remote server may only require that a few settings be set.

The minimum requirement is that the URL for the remote server be set. For simplicity, assume that only `conn1` is being used (this is the typical scenario). See also [Difference Between Conn1 and Conn2 on page 40](#).

To configure the printer to connect to the remote server:

1. Set `weblink.ip.conn1.location` to the URL of the remote server.

The URL must conform to the standards described in RFC3986 (<http://www.ietf.org/rfc/rfc3986.txt>). For example, if the remote servlet's full URL is

`https://www.examplecorpinc.com/zebra/weblink/`

Configure the location setting as follows:

```
! U1 setvar "weblink.ip.conn1.location"  
"https://www.examplecorpinc.com/zebra/weblink/"
```

2. Reset the printer.

When the printer has an IP address, it will attempt to connect to the remote server. In the event that the remote server does not indicate that the printer has connected, logging may need to be enabled in order to determine the failure.

When a Proxy Server is Part of the Network Configuration

If a proxy server must be used to access the remote server, the printer's proxy setting must be set to connect to the server. There are typically four properties associated with a proxy server:

- The proxy server scheme: [HTTP](#) or [HTTPS](#)
- The proxy server address

- The proxy server port (optional)
- The username and password for the proxy (optional)

To supply the address of the proxy server (assuming a default port and no username/password), configure the proxy setting as follows:

```
! U1 setvar "weblink.ip.conn1.proxy" "https://my.internal.proxy/"
```

In this scenario, the proxy address is `my.internal.proxy` and the scheme is `HTTPS`. The default port (1080) will be used. No username or password will be used to authenticate with the proxy.

To specify an alternate port, configure the proxy as follows:

```
! U1 setvar "weblink.ip.conn1.proxy" "https://my.internal.proxy:3128/"
```

To specify a username and password configure the proxy as follows:

```
! U1 setvar "weblink.ip.conn1.proxy" "https://user:pass@my.internal.proxy/"
```

The proxy username, password, and the rest of the URL must follow the rules specified in RFC3986 (<http://www.ietf.org/rfc/rfc3986.txt>).

When HTTP Authentication is Necessary

Use this configuration when, for example, a firewall requires a username and/or password.

It may be necessary to specify a username and password to various routers and servers along the path to the remote server. Typically, when using a browser to access the server, the authentication request will be presented in the form of a dialog window that asks for the username and password.

Because the printer's connection to the remote server is headless and non-interactive, the Weblink configuration allows a user to enter in a server name/username/password triplet. The triplet will be used in the event that the printer is presented with an authentication request (for example, this typically is requested via the `HTTP/1.1 401 Unauthorized` request).

To specify authentication credentials, issue the following:

```
! U1 setvar "weblink.ip.conn1.authentication.add" "servername.com username  
password"
```

In this scenario, the server requesting authentication is `servername.com`. The username and password to be supplied are 'username' and 'password'. The server name can be either a DNS name or an IP address. The username and password cannot be retrieved from SGD, SNMP, or JSON once added. Only the server name will be returned.

More than one set of authentication triplets can be added. The printer will only use the credentials as they are needed. In other words, the printer will only use the credentials for `servername.com` if it receives a `HTTP/1.1 401 Unauthorized` request from `servername.com`.

To see what authentication triplets are specified issue:

```
! U1 getvar "weblink.ip.conn1.authentication.entries"
```

To remove authentication credentials issue the following:

```
! U1 setvar "weblink.ip.conn1.authentication.remove" "servername.com"
```

Additional Firewall Configuration

Some firewalls do not allow the first connection attempt for a device to be HTTPS, or they require newconnections to be made periodically in order to keep the initial connections intact. The weblink test branch was provided to address issues that typically arise because the printer is an unattended device.

To configure the printer to attempt an HTTP connection anytime that the HTTPS connection drops, issue the following commands:

```
! U1 setvar "weblink.ip.conn1.test.location"  
"http://www.zebra.com/apps/linktest"  
! U1 setvar "weblink.ip.conn1.test.test_on" "failure"
```

The `weblink.ip.conn1.test.location` can be any valid HTTP address. The default uses a link provided by Zebra that exists for no other purpose than to help developers test their connections to the internet. Setting `weblink.ip.conn1.test.test_on` to `interval` or `both` will force the printer to attempt a connection to the URL in location every `weblink.ip.conn1.test.retry_interval` seconds (default is 900 seconds/15 minutes).

To configure the printer to try an HTTP connection periodically, independent of the HTTPS success, issue the following commands:

```
! U1 setvar "weblink.ip.conn1.test.location"  
"http://www.zebra.com/apps/linktest"  
! U1 setvar "weblink.ip.conn1.test.test_on" "interval"  
! U1 setvar "weblink.ip.conn1.test.retry_interval" "900"
```

Difference Between Conn1 and Conn2

The printer has the ability to connect to two different servers. Connection 1 (`conn1`) and Connection 2 (`conn2`) are identical in every way in terms of their configuration. It is expected that `conn2` will typically be left unmodified unless a user has an alternate server that they wish to use to configure the printer.

A typical scenario in which both connections would be used is if a user wishes to have the printer connect to both a configuration server and a data source.

Enable Logging

If your printer has trouble connecting, you may wish to enable logging. By default, logging is not enabled in order to reduce the amount of memory consumed when the Weblink feature is enabled. It is recommended that, once the Weblink feature is configured properly and is performing as expected, the logging be disabled or that a very small (less than 100) number of logging entries be permitted.

To enable logging, `weblink.logging.max_entries` needs to be modified. By default, it is set to zero (0), which indicates that no messages are logged. When attempting to troubleshoot connection issues, it is recommended that `max_entries` be set to at least 100 entries. Setting `max_entries` to 100 means that the 100 newest logging entries will be present in `weblink.logging.entries`. Older entries are discarded when the maximum number of entries is reached.

```
! U1 setvar "weblink.logging.max_entries" "100"
```


The logging settings are atypical to the Weblink settings as they do not require the printer to be reset before taking effect. This does not mean that previous logging messages that would have been logged will appear when the `max_entries` setting is changed from zero (0) to a greater value. It means that any new logging messages will be logged from that point forward.

Issue the following command to clear any log entries currently in the `weblink.logging.entries` buffer.

```
! U1 do "weblink.logging.clear" ""
```

Navigating the Log Output

The log will contain useful information, even in the scenario where the printer successfully connects to the remote server. This section explains how to read the log and highlights some of the key entries that will help to determine if the connection was successful.

A typical log entry looks as follows:

```
[12-04-2012 14:57:10.625] [conn1.1] Attempting connection to  
https://www.examplecorpinc.com/zebra/weblink/
```

The first column is the date and time that the event occurred. The format of the date and time matches the format of `rtc.date` and `rtc.time`. The time, however, also includes the milliseconds to aid in troubleshooting network latency concerns.



Note • For printers that do not have a battery to store the Real Time Clock (RTC) value, the date will be restored to the default value upon a power cycle. The default value depends upon how the `rtc.date` Set/Get/Do (SGD) is managed. If it has never been set, then it will default to the firmware build date (the value in `appl.date`). Otherwise, the value in `rtc.date` will default to the value that it was last set to. This does not mean the value of the `rtc.date` when it was power cycled – it means that when a user sets `rtc.date`, that value becomes the new default value. If the printer has a battery, then the `rtc.date` never defaults and continues to track the date as expected.

The second column indicates the connection name and channel that the entries are associated with. The connection name will match the weblink branch that was configured with the respective URL (for example, `conn1` or `conn2`). The channel number indicates which channel on the respective connection that the entries corresponds to.



Note • Channels are additional connections that are requested by the server when the server needs to perform a specific operation that cannot be done on the channel(s) currently open. Typically only the RAW channel is open, which operates similar to the RAW TCP port. It is typical to see two channels opened—the main channel and the RAW channel.

The third column is the actual message, which contains information about what occurred in the printer at the corresponding time in column one. In the above example, the printer was initiating the connection to the URL specified in `weblink.ip.conn1.location`.

Review the section titled [SSL/TLS Certificate Errors on page 60](#) to understand what it means when certain logging messages/errors appear in the log.



Notes • _____

Using AirWatch Connector

This section provides specific information about organizing and managing printers via Zebra AirWatch Connector.

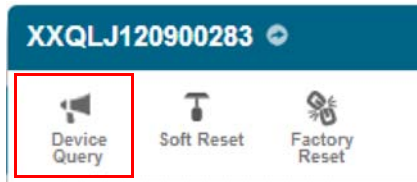
Contents

Printer Discovery	44
Organizing Printers	45
Create a Group	45
Add Printers to the Group	47
View the Location Group Dashboard	48
Profiles	49
Create a Profile	49
Manage a Profile	51
Updating Printer Firmware and Files	52
Upload a File	52
Manage a File	54
Checking Printer Status	55

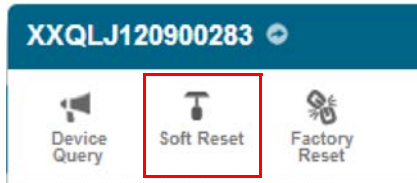
Printer Discovery

When a new printer is powered on, it will automatically notify Zebra AirWatch Connector that it is operational. There are several methods to validate that the printer is operational, settings are available, and communication is active.

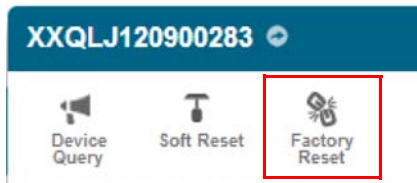
- To determine if the settings are available, see [Request Settings from a Printer on page 33](#).
- To refresh the printer settings, click Device Query on the Printer Summary page.



- To remotely power on and power off the printer, click Soft Reset.



Important • Do not click Factory Reset unless directed to do so by Technical Support. Factory Reset will change settings and lose the Location Group.

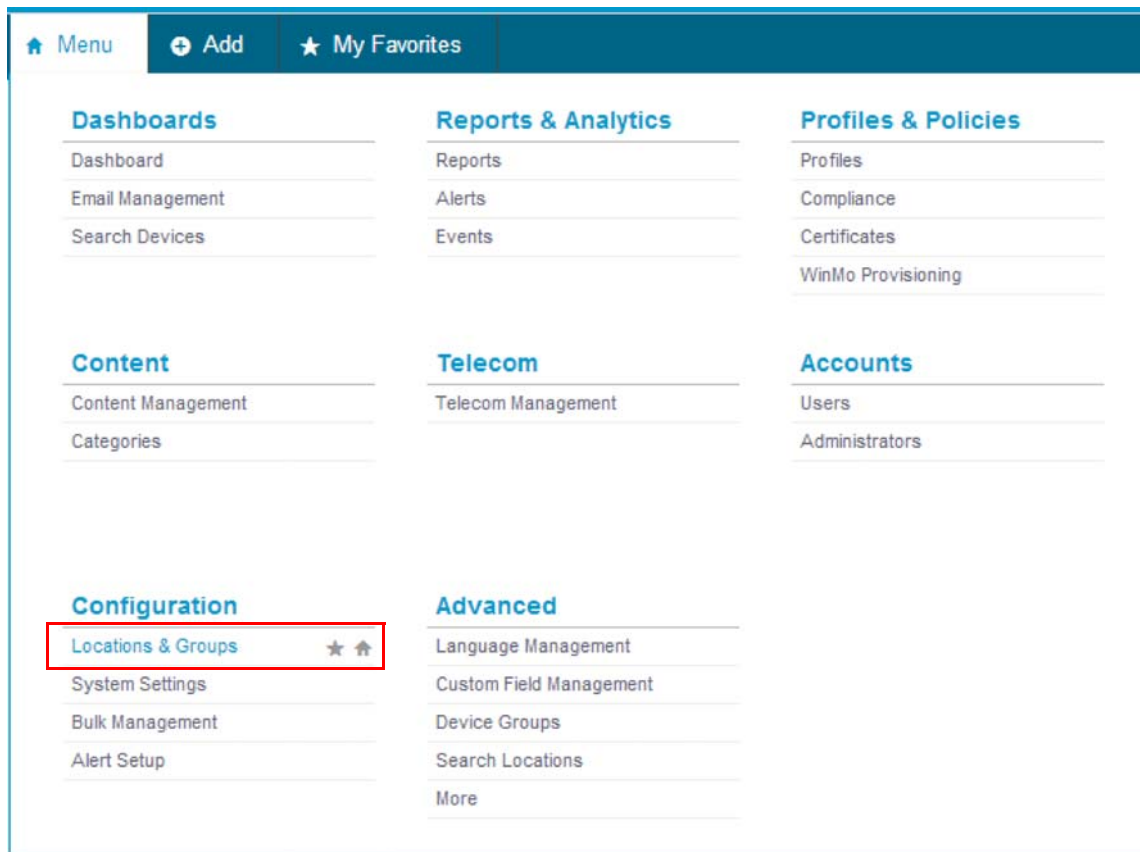


Organizing Printers

After you see the printers on the AirWatch console, you may wish to organize or arrange groups of printers. These groups may be established based on location, role, or region.

Create a Group

1. On the AirWatch console, select the Main Menu at the top left of the screen.
2. In the Configuration section, select Location & Groups.



3. Click on the Main Group link (on the left side of the screen).



4. Click Add Child Location Group.

Location Group Details | **Add Child Location Group** | Locations

Location Group Name*

Group ID

Location Group Type

Country

Locale

Add Default Location

Internal Name*

Display Name*

Status

Location Type

Time Zone

5. Name the Location Group.

6. Enter the Group ID.



Important • Even though the Location Group ID is not identified as required, you must fill in this field in order to group the Zebra printers.

7. Fill in the next three fields:

- a. Location Group Type
- b. Country
- c. Locale

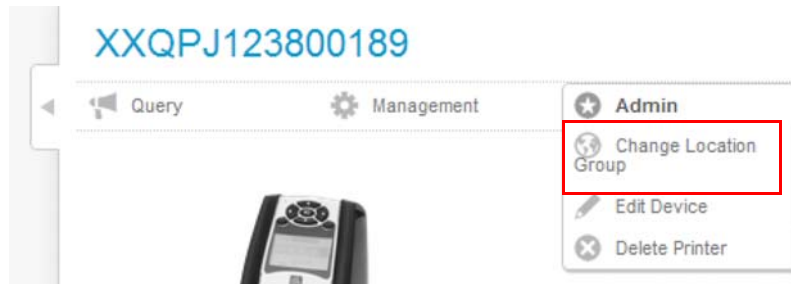


Note • You may change the fields: Internal Name and Display Name even though these and the other fields below them are auto-populated.

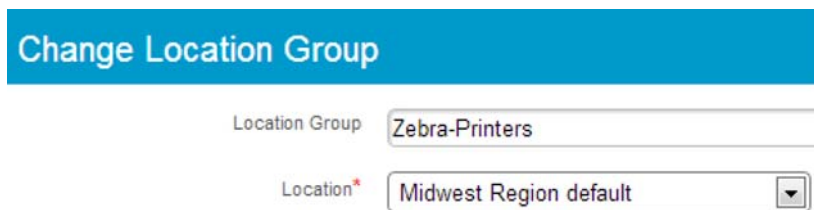
8. Click Save.

Add Printers to the Group

1. Navigate to the Printer Asset Management screen.
2. To add a printer to your new group, click on the Printer Friendly Name.
3. In the Device Details, select Admin > Change Location Group.



4. Click the Location dropdown menu, and select your new group.



5. Click Save.
6. Repeat [step 1](#) through [step 5](#) for all printers that you wish to include in the group.

View the Location Group Dashboard

1. Navigate back to your Asset Tracking screen.
2. Click on the name of your new Location Group.

The screenshot shows the AirWatch Asset Tracking interface. On the left is a navigation sidebar with sections: Location Group (with a dropdown menu showing 'Zebra-Printers'), Dashboard, Asset Tracking (highlighted), Alerts, Configuration (Printer Profiles, Printer Files), System Settings (Print Server). The main content area is titled 'Asset Tracking' and features a 'Models' pie chart showing 100% for 'Zebra QLn320'. To the right of the chart is a 'Last Seen' vertical scale from 0 to 12, with a blue bar at 0 and the label 'Up'. Below the chart is a table with columns: Last Seen, Friendly Name, and Type. One row is visible with a green up arrow, '2m', 'XXQLJ120900283', and 'Zebra-Printer'. The footer of the table area says 'Items 1-1 of 1'.

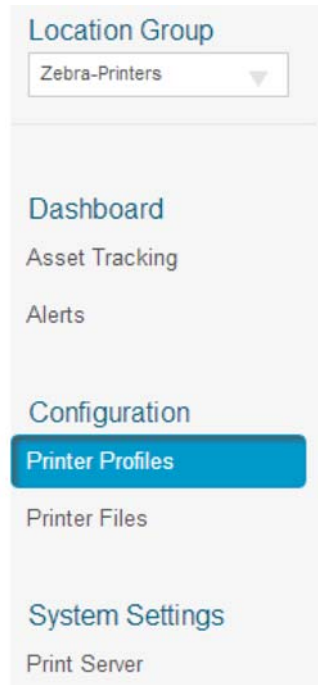
Last Seen	Friendly Name	Type
▲ 2m	XXQLJ120900283	Zebra-Printer

Profiles

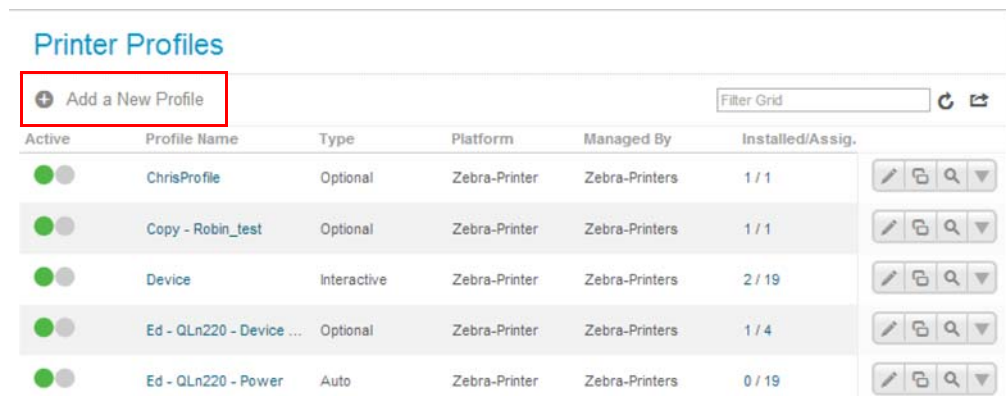
Using profiles is the preferred method to manage and ensure that printer settings within a group are the same.

Create a Profile

1. From the Main Dashboard screen, click Printer Profiles.



2. From the Printer Profiles screen, click Add a New Profile.



The screenshot shows the 'Printer Profiles' screen. At the top left, there is a button labeled '+ Add a New Profile' which is highlighted with a red box. To the right of this button is a 'Filter Grid' input field and some icons. Below the button is a table with the following data:

Active	Profile Name	Type	Platform	Managed By	Installed/Assig.	
<input checked="" type="checkbox"/>	ChrisProfile	Optional	Zebra-Printer	Zebra-Printers	1 / 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Copy - Robin_test	Optional	Zebra-Printer	Zebra-Printers	1 / 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Device	Interactive	Zebra-Printer	Zebra-Printers	2 / 19	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - QLn220 - Device ...	Optional	Zebra-Printer	Zebra-Printers	1 / 4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - QLn220 - Power	Auto	Zebra-Printer	Zebra-Printers	0 / 19	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. Fill in the name and description of the profile.
4. Select the Assignment Type from the dropdown menu.



Note • Profiles consist of three Assignment Types:

- **Auto**: the profile will be sent automatically to the printers within the Assigned Location Group.
- **Optional**: the profile will be assigned to the Assigned Location Group, but it must be manually sent to the group.
- **Interactive**: the profile will not be assigned to any group, and it can be sent to any printer in any group.

General

Name* Robin_test

Description My test profile

Assignment Type Optional

Model iMZ320

Managed By Midwest Region

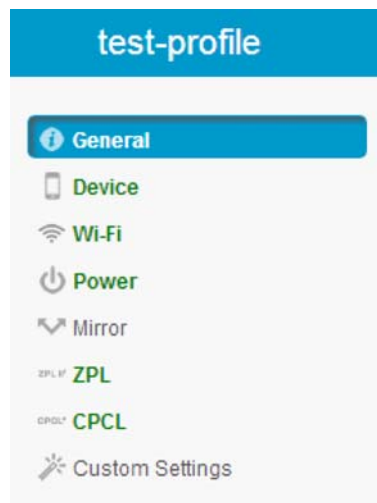
Assigned Location Groups* Midwest Region

Start typing to add a new group

5. Fill in the printer Model and the Assigned Location Groups.
6. Choose one of the following categories:



Note • Do not attempt to include any Custom Settings. This category is not operational at this time.



7. Fill in all of the settings associated with your category.

8. Click Save.
9. Repeat [step 6](#) through [step 8](#) for all categories you wish to include in the profile.
10. Click Save & Publish.



Note • The Save & Publish button will immediately send (“publish”) the settings to those groups with an Assignment Type of “Auto”.

Manage a Profile

1. Navigate to the Asset Tracking Dashboard.
2. Click on the Printer Friendly Name.
3. Click on the Profiles tab.
 - You will see all of the profiles that are available to be downloaded.
4. Click on Actions (see red box) to load the profile immediately to the selected printer.
5. Validate that the Auto Assignment Type profile has been sent to the printer by checking the Status Indicator.

XXQPJ123800187

Device Query Soft Reset Factory Reset

Summary Alerts Profiles Files Event Log

Last Scan: 1/18/2013 4:46:22 PM Filter Grid

Status	Name	Type	Description	Location Gr...	Actions
Device		Interactive		Zebra-Printers	[Action]
⚠	Ed - QLn220 -...	Automatic	Darkness	Zebra-Printers	[Action]
✓	Ed - QLn220 -...	Automatic		Zebra-Printers	[Action]
✓	Ed - QLn220 -...	Automatic	Change low bat...	Zebra-Printers	[Action]

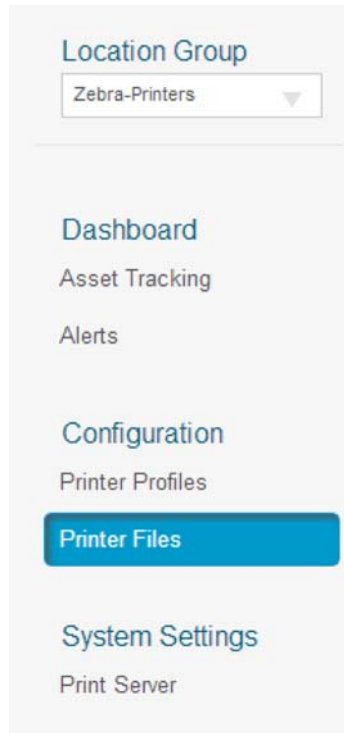
Items 1-4 of 4

Updating Printer Firmware and Files

You can use AirWatch to update printer's operating system and object files. The steps are similar to managing a profile.

Upload a File

1. From the Main Dashboard screen, click Printer Files.



2. From the Printer Files screen, click Add New File.

Printer Files

[+ Add New File](#) Filter Grid ↻ ↗

Active	File Name	Type	Platform	Managed By	Installed/Assig.	
<input checked="" type="checkbox"/>	Copy - Copy - Test	Auto	Zebra-Printer	Zebra-Printers	0 / 7	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - iMZ320 - Test Label	Auto	Zebra-Printer	Zebra-Printers	1 / 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - iMZ320 - WC	Auto	Zebra-Printer	Zebra-Printers	1 / 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - QLn220 - Test Label	Auto	Zebra-Printer	Zebra-Printers	1 / 4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	Ed - QLn220 - WC	Auto	Zebra-Printer	Zebra-Printers	1 / 4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	File6819	Optional	Zebra-Printer	ChrisTestGroup	1 / 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. Fill in the name of the file.
4. Select the Assignment Type from the dropdown menu.



Note • Profiles consist of three Assignment Types:

- **Auto:** the file will be sent automatically to the printers within the Assigned Location Group.
- **Optional:** the file will be assigned to the Assigned Location Group, but it must be manually sent to the group.
- **Interactive:** the file will not be assigned to any group, and it can be sent to any printer in any group.

The screenshot shows the 'Add New File' form with the following fields and values:

- Name***: QLn220 Firmware
- Description**: QLn220 firmware file
- Assignment Type**: Optional (dropdown menu)
- Model**: QLn220 (dropdown menu)
- Managed By**: Midwest Region
- Assigned Location Groups***: Midwest Region (with a search box below it containing 'Start typing to add a new group')

5. Fill in the printer Model and the Assigned Location Groups.
6. Choose File (left-hand menu).

File

The screenshot shows the 'File' tab with the following fields and values:

- File Name***: V68_19_1Z.zpl
- File Version***: 1.0
- Upload New File***: V68.19.1Z.zpl (with an **Upload** button)

Below the fields, there is an information icon and the text: **Max Size 100 MB**

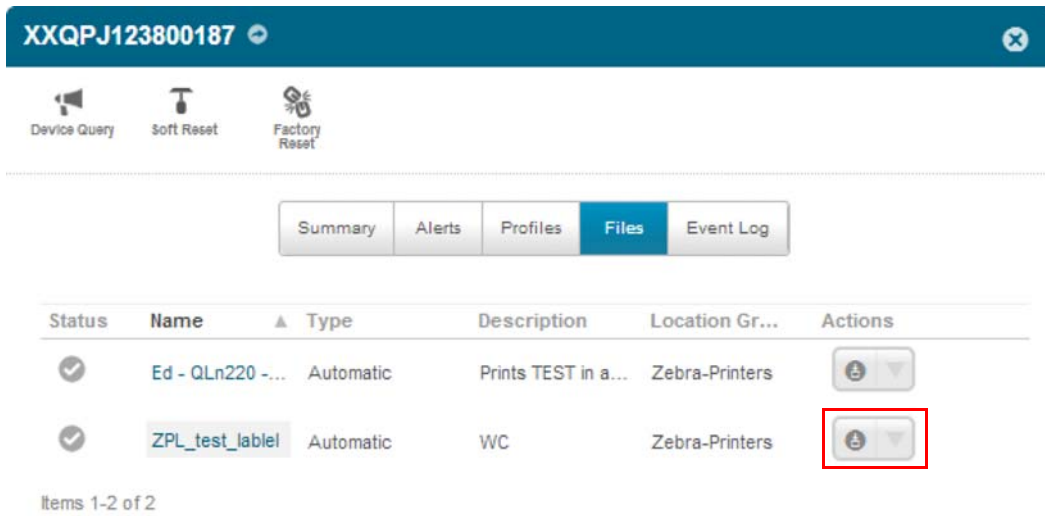
7. Click Upload.
8. Select the file you wish to upload from the dialog box.
9. Click Save.
10. Click Save & Publish.



Note • The Save & Publish button will immediately send (“publish”) the settings to those groups with an Assignment Type of “Auto”.


Manage a File

1. Navigate to the Asset Tracking Dashboard.
2. Click on the Printer Friendly Name.
3. Click on the Files tab.
You will see all of the files that are available to be downloaded.
4. Click on Actions (see red box) to load the file immediately to the selected printer.
5. Validate that the Auto Assignment Type file has been sent to the printer by checking the Status Indicator.



Checking Printer Status

Printer status is communicated to AirWatch via alerts. The following table identifies the current alerts managed by AirWatch Connector.

Alert	Description
PAPER OUT	Paper is out.
RIBBON OUT	Ribbon is out.
HEAD TOO HOT	The printhead is too hot to print.
HEAD COLD	The printhead is too cold to print.
HEAD OPEN	The printhead/media door is open.
SUPPLY TOO HOT	The power supply is too hot.
RIBBON IN	The ribbon has been loaded in the printer.
REWIND	The rewind unit is full (for tabletop printers with a rewind unit).
CUTTER JAMMED	The cutter is jammed.
HEAD ELEMENT BAD	A printhead element has burned out.
POWER ON	The printer has powered on.
CLEAN PRINthead	This alert is sent when the printing odometer has reached the number of meters printed.  Note • This alert is set using the Set/Get/Do command “device.cph_interval”. The airwatch console shows the setting as “Clean Printhead Interval”.
MEDIA LOW	The paper/media is low.
RIBBON LOW	The ribbon is low.
REPLACE HEAD	The printhead needs to be replaced.
BATTERY LOW	The battery charge is low.
RFID ERROR	The RFID encoding has encountered an error.
COLD START	The printer has been powered on.

For more specific information on viewing alerts from AirWatch console, see [Receiving Alerts from a Printer on page 35](#).



Notes • _____

Troubleshooting


This section provides troubleshooting information about the Zebra AirWatch Connector.

Contents

Troubleshooting	58
Installation	58
Using AirWatch	59
SSL/TLS Certificate Errors	60
Other Typical Errors	62
Troubleshooting	63
HTTP Messages	64

Troubleshooting

Installation


Issue	Reason	Solution
Error when starting Tomcat	Various reasons can cause this error.	See Apache Tomcat website — http://tomcat.apache.org/tomcat-7.0-doc/index.html
Tomcat Port conflict error	There is another server trying to use the same port as Zebra AirWatch Connector on the computer. The default port is 443.	Choose one of the following: <ul style="list-style-type: none"> • Stop the other servers using Windows services. • Change the port in Tomcat. <div style="border: 1px solid blue; padding: 5px; margin-top: 10px;">  Important • If you change the port, you must change the “weblink.location” on the printer. From the Control Panel, open Windows Firewall, Advanced settings, and manually add the Port to the allowed Inbound/Outbound list. </div>


Using AirWatch

Issue	Reason	Solution
I add a printer to a Location Group. Once the printer is powered off and on, it is no longer associated with the original location group.	Some settings are not stored until a profile is published to that printer.	<ul style="list-style-type: none"> a. Create a generic profile for the Location Group. b. Set the option to Auto install and click Publish. (All settings are saved and sent to all of the printers within the group.)
I add a printer to a Location Group. I click Soft Reset on the AirWatch console and it is no longer associated with the original location group.	Some settings are not stored until a profile is published to that printer.	<ul style="list-style-type: none"> a. Create a generic profile for the Location Group. b. Set the option to Auto install and click Publish. (All settings are saved and sent to all of the printers within the group.)

SSL/TLS Certificate Errors


Secure connections to the remote server present the opportunity for several errors when attempting to connect. The errors typically involve the certificates used when connecting via SSL or TLS. This section highlights some of the most common issues involving the certificates.

Error	Cause / Solution
"SSL certificate problem: self signed certificate in certificate chain"	<p>One of the situations that prevent a successful connection is not having the correct Certificate Authority certificates installed on the remote server. Zebra requires that the Zebra Root Certificate Authority and the Zebra Subordinate Certificate Authority be installed on the remote server. This error typically indicates that only one of the Zebra Certificate Authority certificates is installed on the remote server.</p>
"SSL certificate problem: unable to get local issuer certificate"	<p>One of the situations that prevent a successful connection is not having the correct Certificate Authority certificates installed on the remote server. Zebra requires that the Zebra Root Certificate Authority and the Zebra Subordinate Certificate Authority be installed on the remote server. This error typically indicates that neither of the Zebra Certificate Authority certificates are installed on the remote server.</p>
"SSL certificate problem: certificate has expired"	<p>This error indicates that the remote server's certificate has expired. This is typically an indication that the printer's date and/or time are incorrect as the Zebra certificates are typically issued for long durations. Check that <code>rtc.date</code> and <code>rtc.time</code> are set correctly.</p> <p> Note • For printers that do not have a battery to store the Real Time Clock (RTC) value, the date will be restored to the default value upon a power cycle. The default value depends upon how the <code>rtc.date</code> SGD is managed. If it has never been set then it will default to the firmware build date (the value in <code>appl.date</code>). Otherwise, the value in <code>rtc.date</code> will default to the value that it was last set to. This does not mean the value of the <code>rtc.date</code> when it was power cycled. It means that when a user sets <code>rtc.date</code> that becomes the new default value.</p> <p>If the printer has a battery, then the <code>rtc.date</code> is never default and continues to track the date as expected.</p>

Error	Cause / Solution
<p>"SSL certificate problem: certificate is not yet valid"</p>	<p>This error indicates that the remote server's certificate was incorrectly issued or that the printer's date and/or time are incorrect. Check that the printer's date and time (<code>rtc.date</code> and <code>rtc.time</code>) are set correctly and that the certificate's start and expiration date are valid.</p> <p> Note • For printers that do not have a battery to store the Real Time Clock (RTC) value, the date will be restored to the default value upon a power cycle. The default value depends upon how the <code>rtc.date</code> SGD is managed. If it has never been set then it will default to the firmware build date (the value in <code>appl.date</code>). Otherwise, the value in <code>rtc.date</code> will default to the value that it was last set to. This does not mean the value of the <code>rtc.date</code> when it was power cycled. It means that when a user sets <code>rtc.date</code> that becomes the new default value.</p> <p>If the printer has a battery then the <code>rtc.date</code> is never default and continues to track the date as expected.</p>
<p>"subjectAltName does not match 1.2.3.4"</p> <p>"SSL certificate subject name 'examplecorpinc.com' does not match target host name '1.2.3.4'"</p>	<p>Part of the certificate validation process involves making sure that the remote server is who it claims to be. A certificate can be created to validate against several aliases/DNS names. Typically the certificate will not contain the IP address of the server as IP addresses are subject to change. When specifying the remote server's URL via <code>weblink.ip.conn1.location</code> be sure to specify one of the DNS aliases listed in the certificate. The valid names will be listed either under the Common Name (CN) field and/or the subjectAltName (SAN or Subject Alternate Name) field within the certificate. For example, the certificate may have the CN set to 'examplecorpinc' and the SAN set to 'examplecorpinc.com' or 'alias.for.examplecorpinc.com'. Any of the CN or SAN names can be used, but, as the IP address is not listed in the CN or SAN it cannot. It is not recommended that the IP address be part of the SAN if a DNS name is available to avoid connection issues that may arise due to subnet change or DHCP lease expirations, etc.</p>
<p>"Unknown SSL protocol error in connection to ..."</p>	<p>When this message is seen it means that the remote server's SSL/TLS configuration is incorrect. Refer to Troubleshooting on page 63 to ensure the server and printer are both configured correctly.</p>
<p>I do not see any of these errors, but the printer still does not connect.</p>	<p>Refer to Troubleshooting on page 63 to ensure the server and printer are both configured correctly.</p>

Other Typical Errors

While SSL/TLS connection errors are the most common, there are issues that can arise that prevent a successful connection. This section highlights the most common issues.

Error	Cause / Solution
<p>"Read failed with an unexpected error"</p>	<p>This message typically indicates that connection to the remote server was lost. The connection can either be lost due to the server powering off or resetting, the firewall or proxy server shutting down the connection, or because the remote server gracefully requests that the connection be discontinued.</p> <p> Note • After 60 seconds of inactivity on the connection the printer will attempt to contact the server via a TCP Keepalive. If the connection is still present the server will respond and the connection will remain open. After 10 successive failed attempts to contact the remote the printer will assume the connection is severed and close the connection. The printer will resume it's attempt to connect to the remote server so that when the server comes back online the printer will re-establish communication.</p>
<p>"Failed to connect (SP = #, CI = #, UW = #, AC = #, PC = #)"</p>	<p>If this error is seen one or more of the '#' values will be set to 0. This is an indication of an incorrect configuration of the remote server. Ensure that the remote server is setup according to the Servlet configuration in the Zebra Link-OS SDK documentation.</p> <p>This typically indicates an incorrect version of the remote Application Server (for example, Apache/Tomcat version may be incorrect). If this issue persists contact Zebra Technical Support.</p>

Troubleshooting

Whenever troubleshooting a connection issue, the following questions should be answered to ensure the configuration is correct.

1. Is the printer connected correctly via Wireless or Ethernet?
2. Does the printer have a valid IP address?
3. Can I ping the printer's IP address from a device on the same network as the printer?
4. Is the remote server URL in `weblink.ip.conn1.location` correct and does it point to the remote server that is configured for weblink functionality?
5. Can you connect to the location defined in the `weblink.ip.conn1.location` setting via a browser?
6. Is the remote server I am attempting to connect to outside the corporate firewall?
7. Can the URL specified in `weblink.ip.conn1.test.location` be accessed?
 If this is the case, talk with your administrator about altering restrictions for accessing HTTPS connections.
8. Does the firewall require a username and password to access the remote server?
9. Do I require a proxy server to access the remote server?
10. Is the proxy server port the default (1080) or another port (for example, 3128 for the Linux Squid proxy)?



Note • If using the Linux Proxy Server Squid, and you are having trouble connecting, note that it may be configured to:

- a. disallow POST messages
- b. only operate in HTTP/1.0 mode 3
- c. disallow SSL connections.

Refer to your Linux Squid documentation for complete details.

11. Does the firewall permit HTTPS connections initially or do I need to connect via HTTP first?
12. Is the remote server configured to use SSL v3.0 or TLS 1.0?
 TLS1.0 is recommended, but SSL v3.0 is also supported. Versions prior to SSL v3.0 and later than TLS v1.0 are not currently supported.
13. Are the Zebra Certificate Authority Certificates correctly installed on the remote server?
14. Was the server's certificate issued by Zebra and is it signed by the Zebra Certificate Authority?
15. Has the server's certificate expired?
16. Is the printer's date and time within the issue and expired period of the server's certificate?

17. Does the value in `weblink.ip.conn1.location` match either the Common Name or one of the names listed in the Subject Alternate Name of the remote server's certificate?
18. Is the proxy server configured correctly and does the respective proxy server allow HTTPS connections via the HTTP CONNECT method?
19. Are there any HTTP authentication attempts when trying to connect that fail?
20. Are there any HTTP/1.1 4xx messages in the log?

If your connection issues persist and the solutions in this document do not help, contact Zebra Tech Support and provide the output of the following command. Ensure that logging is enabled and that the error(s) appear within the entries)

```
! U1 getvar "weblink"
```

HTTP Messages

Message	Cause / Solution
HTTP/1.1 100 Continue	This indicates that the server and printer have begun communicating and is often seen in place of HTTP/1.1 200 OK.
HTTP/1.1 101 Switching Protocols	This indicates that the basic connection to the server worked and the protocol is being switched to a more efficient protocol for data transfer.
HTTP/1.1 200 OK	This indicates that an HTTP GET or HTTP POST was successful.
HTTP/1.1 30x Moved/Redirect/etc	This indicates that the URL specified has moved or that the firewall redirected the printer to another location (typically this is done to authenticate a user in a transparent proxy configuration).
HTTP/1.1 401 Unauthorized	This indicates that the printer either needs to authenticate with the server or failed to authenticate with the remote server (or server/router along the route to the server).
HTTP/1.1 403 Forbidden	This typically means that the authentication was provided and valid, however, the user does not have access to the requested resource.
HTTP/1.1 404 Not Found	This indicates that the remote URL provided points to an invalid location on the server. This does indicate, however, that the server name is valid. Just the path after the domain name is invalid.

WebLink Set/Get/Do Commands

This section describes the Set/Get/Do commands, parameters, and values that are available with Zebra AirWatch Connector.

Contents

Introduction to SGD Commands	66
weblink.enable	67
weblink.ip.conn[1 2].authentication.add	68
weblink.ip.conn[1 2].authentication.entries	70
weblink.ip.conn[1 2].authentication.remove	71
weblink.ip.conn[1 2].enable	72
weblink.ip.conn[1 2].location	73
weblink.ip.conn[1 2].maximum_simultaneous_connections	74
weblink.ip.conn[1 2].proxy	75
weblink.ip.conn[1 2].retry_interval	77
weblink.ip.conn[1 2].test.location	78
weblink.ip.conn[1 2].test.retry_interval	80
weblink.ip.conn[1 2].test.test_on	81
weblink.logging.clear	83
weblink.logging.entries	84
weblink.logging.max_entries	85
weblink.printer_reset_required	87
weblink.restore_defaults	88

Introduction to SGD Commands

For more specific information about SGD syntax and structure, see the [Zebra Programming Guide](#) section on Set/Get/Do Command Structure.

To send SGD commands to a printer, use the [Zebra Setup Utilities](#).

weblink.enable

Description This command indicates if one or more of the weblink connections are active.

If there is more than one connection under the weblink branch (for example, `weblink.ip.conn1`) and if any of the `.location` values are set, then this SGD will be set to "on". If all connections are disabled (all connection `.location` values set to ""), then this value will be set to "off".

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `getvar`

Commands	Details
<code>getvar</code>	<p>This command indicates if one or more of the weblink connections are active.</p> <p><i>Format:</i> <code>! U1 getvar "weblink.enable"</code></p> <p><i>Result:</i></p> <ul style="list-style-type: none"> • "yes" if any of the <code>.location</code> values are set • "off" if all connections are disabled

weblink.ip.conn[1|2].authentication.add

Description This command allows the user to add a single server/username/password triplet into the list of authentication entries.

When the printer attempts to connect to the server (url specified in `weblink.ip.conn[1|2].location`) the server may require HTTP authentication (e.g. digest, basic, DNS, etc.). There may be multiple authentication requests along the route to the destination (e.g. a local server first requires HTTP authentication as well as on the remote server).

For each HTTP authentication request received while attempting to connect, the printer will enumerate the authentication entries and attempt to satisfy the request with the username/password pair provided for the respective server. The server name in the entry is what determines which username/password pair should be used for which authentication request. Both DNS names and IP addresses are acceptable. The server, username, and password are separated by a single space (not a tab or other white space character). The server name is the only required field. If no username is supplied, but a password is, there must be two spaces between the server and the password fields. If there is a username but no password, or simply just the servername, no space is required at the end of the entry.

If the command is changed when the connection is enabled (`weblink.enable` is set to "on"), it will not take effect until the connection is disabled and then re-enabled.



Important • This setting only be changed when `weblink.enable` is set to "off".

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `setvar`

Commands	Details
setvar	<p>This command adds a single server/username/password triplet to the list of authentication entries.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 setvar "weblink.ip.conn1.authentication.add" "servername[username][password]" • ! U1 setvar "weblink.ip.conn2.authentication.add" "servername[username][password]" <p><i>Values:</i> servername [username][password] has a maximum length of string is 2048 characters</p> <p><i>Default:</i> NA</p>



Example 1 • In this example, a username and a password is supplied:

```
! U1 setvar "weblink.ip.conn1.authentication.add" "my.server.lan johndoe password"
```

Example 2 • In this example, no password is supplied

```
! U1 setvar "weblink.ip.conn1.authentication.add" "my.server.lan johndoe"
```

Example 3 • In this example, no username is supplied (note the double space)

```
! U1 setvar "weblink.ip.conn1.authentication.add" "my.server.lan password"
```

Example 4 • In this example, no username or password is supplied

```
! U1 setvar "weblink.ip.conn1.authentication.add" "my.server.lan"
```

weblink.ip.conn[1|2].authentication.entries

Description This command lists the server names added to the authentication entries list.

Only the server names will be shown. The username and passwords will not be shown. The server names are separated by a `\r\n` so that each shows up on its own line.

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `getvar`

Commands	Details
<code>getvar</code>	<p>This command lists the server names for the specified connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• <code>! U1 getvar "weblink.ip.conn1.authentication.entries"</code>• <code>! U1 getvar "weblink.ip.conn2.authentication.entries"</code>

weblink.ip.conn[1|2].authentication.remove

Description This command allows the user to remove a single server/username/password triplet from the list of authentication entries.

To remove an entry only the server name is supplied. If an invalid entry is supplied no action is taken. If the SGD is changed when the connection is enabled (`weblink.ip.conn[1|2].enable`), it will not take effect until the connection is disabled and then re-enabled. It is therefore recommended that this setting only be changed when `weblink.ip.conn[1|2].enable` is set to "off".

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar

Commands	Details
setvar	<p>This command removes a single server/username/password triplet from the list of authentication entries.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 setvar "weblink.ip.conn1.authentication.remove" "servername" • ! U1 setvar "weblink.ip.conn2.authentication.remove" "servername" <p><i>Values:</i> servername has a maximum length of string is 2048 characters.</p> <p><i>Default:</i> NA</p>



Example • In this example, a username and a password is supplied

```
! U1 setvar "weblink.ip.conn1.authentication.remove" "my.server.lan"
```

weblink.ip.conn[1|2].enable

Description This command enables or disables the weblink IP connection #1.

A side effect of setting this SGD to "on", the `weblink.enable` will also be set to "on". When this setting is set to "off", if the `weblink.ip.conn2.enable` is also "off", the `weblink.enable` will be set to "off".

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `setvar`, `getvar`

Commands	Details
<code>setvar</code>	<p>This command enables/disables the weblink IP connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 setvar "weblink.ip.conn1.enable" "value"• ! U1 setvar "weblink.ip.conn2.enable" "value" <p><i>Values:</i> "on", "off"</p> <p><i>Default:</i> "off"</p>
<code>getvar</code>	<p>This command retrieves the current setting.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 setvar "weblink.ip.conn1.enable"• ! U1 setvar "weblink.ip.conn2.enable" <p><i>Result:</i></p> <ul style="list-style-type: none">• "on" if the connection is enabled• "off" if the connection is disabled

weblink.ip.conn[1|2].location

Description This command assigns the URL of the server for this connection. The URL must follow the URL rules for the HTTP[S] protocol outlined in RFC2396 (<http://www.ietf.org/rfc/rfc2396.txt>).

The setting will not take effect until the printer is reset. Changing this setting will set weblink.printer_reset_required to "yes".

^JUF, ^JUS, ^JUN, ^JUA, and device.restore_defaults do not have any affect on this setting.

Supported Devices

- iMz™ series
- QLn™ series
- ZT200™ series
- ZD500R™ series

Type setvar, getvar

Commands	Details
setvar	<p>This command sets the server URL for the specified connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 setvar "weblink.ip.conn1.location" "value" • ! U1 setvar "weblink.ip.conn2.location" "value" <p><i>Values:</i> any HTTPS URL up to 2048 characters</p> <p><i>Default:</i> ""</p>
getvar	<p>This command returns the server URL currently assigned to the connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 getvar "weblink.ip.conn1.location" • ! U1 getvar "weblink.ip.conn2.location"



Example •

```
! U1 setvar "weblink.ip.conn2.location"
"https://my.linkos.server.com:8080/link/os"
```

weblink.ip.conn[1|2].maximum_simultaneous_connections

Description This command indicates the maximum number of simultaneous connections that can be initiated by the printer.

Via the main connection (the original connection initiated by the printer to the remote server), the remote server can request that additional connections from the printer be initiated (e.g. a connection that supports only JSON SGDs, one that behaves similar to the RAW TCP port).

The server is free to request as many as it thinks it needs, but the printer will prevent more than N number of connections, where N is the value of this command.

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, getvar

Commands	Details
setvar	<p>This command sets the maximum number of connections.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 setvar "weblink.ip.conn1.maximum_simultaneous_connections" "value"• ! U1 setvar "weblink.ip.conn2.maximum_simultaneous_connections" "value" <p><i>Values:</i> Any integer from 1-100</p> <p><i>Default:</i> "10"</p>
getvar	<p>This command retrieves the maximum set number of connections.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 getvar "weblink.ip.conn1.maximum_simultaneous_connections"• ! U1 getvar "weblink.ip.conn2.maximum_simultaneous_connections"



Example • This example sets the conn1 maximum connections to 3.

```
! U1 setvar "weblink.ip.conn1.maximum_simultaneous_connections" "3"
```

weblink.ip.conn[1|2].proxy

Description This command assigns the URL of the proxy for the connection.

The proxy server protocol, port, domain, username, and password are all encoded into the URL via the format outlined in RFC2396 (<http://www.ietf.org/rfc/rfc2396.txt>).

The username and password must avoid the invalid characters listed in RFC2396 (e.g. ':', '@', '/', etc). If an invalid character must be used it needs to be escaped using '%' as described in RFC2396.

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `setvar`, `getvar`, `do`

Commands	Details
<code>setvar</code>	<p>This command assigns the URL of the connection proxy.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 <code>setvar "weblink.ip.conn1.proxy" "url"</code> • ! U1 <code>setvar "weblink.ip.conn2.proxy" "url"</code> <p><i>Values:</i></p> <ul style="list-style-type: none"> • Any valid URL up to 2048 characters • Expected URL format: [http https]://[user:pass@]domain[:port]/[path] • The URL will need to be built according to the server/proxy environment the printer is running within. <p><i>Default: ""</i></p> <ul style="list-style-type: none"> • The user:pass, port, and path are all optional. • The default scheme must be either HTTPS or HTTP. The default is HTTP. • The default port is 1080. • The default is to omit the username and password.
<code>getvar</code>	<p>This command retrieves the URL of the connection proxy.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 <code>getvar "weblink.ip.conn1.proxy"</code> • ! U1 <code>getvar "weblink.ip.conn2.proxy"</code>

Commands	Details
do	<p>This command assigns the URL of the connection proxy.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 do "weblink.ip.conn1.proxy" "url"• ! U1 do "weblink.ip.conn2.proxy" "url" <p><i>Values:</i></p> <ul style="list-style-type: none">• Any valid URL up to 2048 characters• Expected URL format: [scheme://][user:pass@]domain[:port]/[path]• The URL will need to be built according to the server/proxy environment the printer is running within. <p><i>Default: ""</i></p> <ul style="list-style-type: none">• The scheme, user:pass, port, and path are all optional.• The default scheme is http.• The default port is 1080.• The default is to omit the username and password.



Example • Examples of how to connect to various proxy servers:

`http://username:password@mydomain.com:3128/`
`http://mydomain.com/`

weblink.ip.conn[1|2].retry_interval

Description This command sets the number of seconds between attempts to connect to the server URL provided in `weblink.ip.conn1.location`. If an attempt is unsuccessful or the connection is lost, the printer will wait 'retry_interval' seconds before attempting to connect again.

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, getvar, do

Commands	Details
setvar	<p>This command sets the number of seconds to wait before attempting to reconnect to the server.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 setvar "weblink.ip.conn1.retry_interval" "value" • ! U1 setvar "weblink.ip.conn2.retry_interval" "value" <p><i>Values:</i> 1 - 600</p> <p><i>Default:</i> "10"</p>
getvar	<p>This command returns the number of seconds to wait between connection attempts.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 getvar "weblink.ip.conn1.retry_interval" • ! U1 getvar "weblink.ip.conn2.retry_interval"
do	<p>This command sets the number of seconds to wait before attempting to reconnect to the server.</p> <p><i>Format:</i></p> <ul style="list-style-type: none"> • ! U1 do "weblink.ip.conn1.retry_interval" "value" • ! U1 do "weblink.ip.conn2.retry_interval" "value" <p><i>Values:</i> 1 - 600</p> <p><i>Default:</i> "10"</p>

weblink.ip.conn[1|2].test.location

Description This command holds the URL for testing a connection to the internet. This is meant to assist users in debugging their printer's connection to remote servers when there are issues with the main weblink connection (conn1 or conn2).

The URL must follow the URL rules for the HTTP[S] protocol outlined in RFC2396 (<http://www.ietf.org/rfc/rfc2396.txt>).

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, getvar, do

Commands	Details
setvar	<p>This command sets the URL to hold for testing a connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 setvar "weblink.ip.conn1.test.location" "url"• ! U1 setvar "weblink.ip.conn2.test.location" "url" <p><i>Values:</i> Any HTTPS URL up to 2048 characters</p> <p><i>Default:</i> "http://www.zebra.com/apps/linktest"</p>
getvar	<p>This command retrieves the printer's test connection URL.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 getvar "weblink.ip.conn1.test.location"• ! U1 getvar "weblink.ip.conn2.test.location"
do	<p>This command sets the URL to hold for testing a connection.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 do "weblink.ip.conn1.test.location" "url"• ! U1 do "weblink.ip.conn2.test.location" "url" <p><i>Values:</i> Any HTTPS URL up to 2048 characters</p> <p><i>Default:</i> "http://www.zebra.com/apps/linktest"</p>



Example • The test connection can assist the user in several ways/scenarios:

1. If the `test.test_on` value is set to "failure", any time the main weblink (`conn[1|2].location`) connection fails to connect then the `test.location` URL will be used. In this situation, an attempt will be made to contact the remote URL in `test.location`, using authentication and proxy configuration that is specified by the main connection.
2. If the `test.test_on` value is set to "interval" an attempt will be made to contact the remote URL in `test.location` every `test.retry_interval` seconds, using authentication and proxy configuration that is specified by the main connection.
3. If the `test.test_on` value is set to "both", then scenario 1 and 2 will both occur. This is useful for users who will use an HTTP connection to move through their firewall - and thereafter frequently refresh the connection to indicate to their firewall that there is still activity for the purpose of keeping the connection alive.

weblink.ip.conn[1|2].test.retry_interval

Description This command determines how often, in seconds, a connection to the test.location URL should be attempted. This setting is only applicable when the `test.test_on_SGD` is set to "interval" or "both".

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setevar, getvar, do

Commands	Details
setvar	<p>This command sets the interval for how often a connection to the test.location URL should be attempted.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 setvar "weblink.ip.conn1.test.retry_interval" "value"• ! U1 setvar "weblink.ip.conn2.test.retry_interval" "value" <p><i>Values:</i> 0-1800 (in seconds, providing 0 second - 30 minute interval)</p> <p><i>Default:</i> "900"</p>
getvar	<p>This command retrieves the retry interval.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 getvar "weblink.ip.conn1.test.retry_interval"• ! U1 getvar "weblink.ip.conn2.test.retry_interval"
do	<p>This command sets the interval for how often a connection to the test.location URL should be attempted.</p> <p><i>Format:</i></p> <ul style="list-style-type: none">• ! U1 do "weblink.ip.conn1.test.retry_interval" "value"• ! U1 do "weblink.ip.conn2.test.retry_interval" "value" <p><i>Values:</i> 0-1800</p> <p><i>Default:</i> "900"</p>

weblink.ip.conn[1|2].test.test_on

Description This command determines when the test connection should be attempted. This assists in debugging the printer's connection to remote servers when there are issues with the main weblink connection (conn1 or conn2).

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, getvar, do

Commands	Details
setvar	This command indicate when the test connection should be attempted. <i>Format:</i> <ul style="list-style-type: none"> • ! U1 setvar "weblink.ip.conn1.test.test_on" "value" • ! U1 setvar "weblink.ip.conn2.test.test_on" "value" <i>Values:</i> off, failure, interval, both <i>Default:</i> "failure"
getvar	This command retrieves the test connection setting. <i>Format:</i> <ul style="list-style-type: none"> • ! U1 getvar "weblink.ip.conn1.test.test_on" • ! U1 getvar "weblink.ip.conn2.test.test_on"
do	This command sets when the test connection should be attempted. <i>Format:</i> <ul style="list-style-type: none"> • ! U1 do "weblink.ip.conn1.test.test_on" "value" • ! U1 do "weblink.ip.conn2.test.test_on" "value" <i>Values:</i> off, failure, interval, both <i>Default:</i> "failure"



Example • The test connection can assist the user in several ways/scenarios:

1. If the `test.test_on` value is set to "failure", any time the main weblink (`conn[1|2].location`) connection fails to connect then the `test.location` URL will be used. An attempt will be made to contact the remote URL in `test.location`, using authentication and proxy configuration that is specified by the main connection.
2. If the `test.test_on` value is set to "interval" an attempt will be made to contact the remote URL in `test.location` every `test.retry_interval` seconds, using authentication and proxy configuration that is specified by the main connection.
3. If the `test.test_on` value is set to "both", then scenario 1 and 2 will both occur. This is useful for users who will use an HTTP connection to move through their firewall - and thereafter frequently refresh the connection to indicate to their firewall that there is still activity for the purpose of keeping the connection alive.

weblink.logging.clear

Description This command clears the weblink log. Setting this value to anything will clear it, including an empty string.

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, do

Commands	Details
setvar	This command clears the weblink log entires. <i>Format:</i> ! U1 setvar "weblink.logging.clear" "value" <i>Values:</i> Any string value, including an empty string. <i>Default:</i> NA
do	This command clears the weblink log entires. <i>Format:</i> ! U1 do "weblink.logging.clear" "value" <i>Values:</i> Any string value, including an empty string. <i>Default:</i> NA

➔ **Example** • This example clears the weblink log entries with an empty string value.
! U1 setvar "weblink.logging.clear" ""

weblink.logging.entries

Description This command returns the N number of entries in the weblink log, where N has a maximum value that is set by `weblink.logging.max_entries`.

The weblink log is a collection of events related to connecting to a remote Link-OS™ server. The log entries range anywhere from general status to errors that prevented a successful connection. The log contains entries from all connections and are labeled so that it is clear which log entries are for which connection. Each log entry also contains a timestamp for when it was logged by the system. The newest events will appear at the bottom of the list.

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `getvar`

Commands	Details
<code>getvar</code>	This command returns a lists of entries in the weblink log. <i>Format:</i> ! U1 <code>getvar "weblink.logging.entries"</code> <i>Values:</i> NA <i>Default:</i> ""



Example • This example shows the result from `weblink.logging.entries`:

```
[01-04-2013 08:40:45.655] [conn1.1] HTTP/1.1 404 Not Found
[01-04-2013 08:40:45.659] [conn1.1] Received HTTP code 404 from proxy after
CONNECT
[01-04-2013 08:40:45.660] [conn1.1] Closing connection
[01-04-2013 08:40:45.662] [conn1.1] Failed to connect (SP = 0, CU = 0, UW = 0, AC
= 0, PC = 0)
```

weblink.logging.max_entries

Description This command specifies the maximum number of individual log entries that will be stored in the `weblink.logging.entries` command.



Important • Changes to this command are immediate and may result in some log entries being lost. If there are N log entries currently in the log, the user sets the `max_entries` to M, where M is less than N, the oldest (N-M) log entries will be removed.

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `setvar`, `getvar`, `do`

Commands	Details
<code>setvar</code>	<p>This command sets the maximum number of log entires that will be stored.</p> <p><i>Format:</i> ! U1 setvar "weblink.logging.max_entries" "value"</p> <p><i>Values:</i> 0 - 10000</p> <p>Note • Setting the value to 0 disables logging.</p> <p><i>Default:</i> "0"</p>
<code>getvar</code>	<p>This command returns the setting for the maximum number of log entries that will be stored.</p> <p><i>Format:</i> ! U1 getvar "weblink.logging.max_entries"</p>
<code>do</code>	<p>This command sets the maximum number of log entires that will be stored.</p> <p><i>Format:</i> ! U1 do "weblink.logging.max_entries" "value"</p> <p><i>Values:</i> 0 - 10000</p> <p>Note • Setting the value to 0 disables logging.</p> <p><i>Default:</i> "0"</p>



Example 1 • In this example, `weblink.logging.max_entries` is set to 3:

```
[01-04-2013 08:40:45.659] [conn1.1] Received HTTP code 404 from proxy after  
CONNECT
```

```
[01-04-2013 08:40:45.660] [conn1.1] Closing connection
```

```
[01-04-2013 08:40:45.662] [conn1.1] Failed to connect (SP = 0, CU = 0, UW = 0, AC  
= 0, PC = 0)
```

Example 2 • In this example, `weblink.logging.max_entries` is set to 2:

`weblink.logging.entries` becomes:

```
[01-04-2013 08:40:45.660] [conn1.1] Closing connection
```

```
[01-04-2013 08:40:45.662] [conn1.1] Failed to connect (SP = 0, CU = 0, UW = 0, AC  
= 0, PC = 0)
```

weblink.printer_reset_required

Description This command retrieves a "yes" or "no" value indicating whether any of the weblink settings have been modified.

^JUF, ^JUS, ^JUN, ^JUA, and `device.restore_defaults` do not have any effect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type `getvar`

Commands	Details
getvar	This command retrieves whether any of the weblink settings are modified. <i>Format:</i> ! U1 getvar "weblink.printer_reset_required" <i>Values:</i> "yes" or "no" <i>Default:</i> "no"

weblink.restore_defaults

Description This command defaults, and saves, the weblink branch settings. Any value, including an empty string, will default the weblink branch settings.



Note • The entire weblink branch of settings will be defaulted and the settings are saved; however, the weblink connections will not use the new settings until the printer is restarted (e.g. the `weblink.printer_reset_required` SGD will be "yes" after a default).

`^JUF`, `^JUS`, `^JUN`, `^JUA`, and `device.restore_defaults` do not have any affect on this setting.

Supported Devices

- iMZ 220™, iMZ 320™
- QLn220™, QLn320™, QLn420™
- ZT210™, ZT220™, ZT230™

Type setvar, do

Commands	Details
setvar	This command defaults the weblink branch settings. <i>Format:</i> ! U1 setvar "weblink.restore_defaults" "value" <i>Values:</i> Any value, including an empty string, will default the branch <i>Default:</i> NA
do	This command defaults the weblink branch settings. <i>Format:</i> ! U1 do "weblink.restore_defaults" "value" <i>Values:</i> Any value, including an empty string, will default the branch <i>Default:</i> NA



Example • These all default the branch:

```
! U1 setvar "weblink.restore_defaults" ""  
! U1 setvar "weblink.restore_defaults" "foo"  
! U1 do "weblink.restore_defaults" ""  
! U1 do "weblink.restore_defaults" "foo"
```




Zebra Technologies Corporation

Zebra Technologies Corporation
475 Half Day Road, Suite 500
Lincolnshire, IL 60069 USA
T: +1 847 634 6700
Toll-free +1 866 230 9494
F: +1 847 913 8766

Zebra Technologies Europe Limited

Dukes Meadow
Millboard Road
Bourne End
Buckinghamshire, SL8 5XF, UK
T: +44 (0)1628 556000
F: +44 (0)1628 556001

Zebra Technologies Asia Pacific, LLC

120 Robinson Road
#06-01 Parakou Building
Singapore 068913
T: +65 6858 0722
F: +65 6885 0838

<http://www.zebra.com>